Using Your Outside Voice: action research speaks for the school librarian

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Abstract
Successful school library programs occur through careful planning and reflection. School librarians who are reflective practitioners observe how learning occurs in the library and the classroom and consider ways to improve it. They consult research and collaborate with teachers so students are more successful. This reflective process is improved when it is applied in a systematic way, through action research. With action research, reflection is based on evidence, using data collected by the practitioner. This study presents cumulative outcomes from 156 action research projects conducted by 39 school librarians. It also includes results from a follow-up survey completed by 19 of the 39 school librarians that demonstrates how conducting action research affects their sense of professional efficacy.

Keywords: School library programs, Action research, Professional efficacy

Action Research: Evidence of School Library Success

As the school library evolves to include learning commons, makerspaces, and other areas for collaboration, discovery, and study, it is easy to lose track of which traditional library services to preserve, the innovations that work, and those that need improving or abandoning. It is even more difficult to make the case to onlookers that what is going on in the library, which has become a noisier place, is progress (Palin, 2014). In a climate of school accountability, evidence of successful practice is required. As reflective practitioners, school librarians have a feel for what is successful in their libraries. Action research is a way for this reflection to be systematic and evidence-based. Action research provides data that can be used for decision-making and school library evaluation (Todd, 2015; Wideman, 2011). Action research is a model for continuous quality improvement, a concept administrators and politicians understand (Ballard, 2015). As this study shows, the concrete evidence collected through action research speaks ‘out loud’ for school librarians, making the case for how the changes taking place in the library improve student engagement and learning as well as teacher productivity.

School librarians who are reflective practitioners observe how learning occurs in the library and the classroom and consider ways to improve it (Todd, 2015). They consult research and collaborate with teachers so that students are more successful. This reflective process is much improved when it is applied in a systematic way, through action research. Action research is a bridge between research and practice (Parsons & Brown, 2002). It is research designed to improve local conditions. It differs from academic research which has stricter standards for validity and reliability (Bruce, Flynn, & Stagg-Peterson, 2011). This is not to say action research does not consider threats to the validity of data and conclusions. The school librarian as an action researcher addresses threats as a matter of professionalism and accountability to administrators, other teachers, and students. Decisions are made according to the best approach to improve practice rather than to generate and confirm theories. In addition to improving practice, action research in the school library provides a way to demonstrate and justify library programs (Loerstcher & Woolls, 2001) and to highlight how the librarian is a leader in school improvement (Howard & Eckhardt, 2005).

Action research is a "process of investigation based on development, execution, and evaluation of experiments" that can be used to improve classroom practice (Wideman, 2011, p. 52). Top down initiatives in education, such as the Common Core State Standards in the United States and the standardized testing that accompanies it, garner public attention. However progress toward student achievement occurs when the front line workers, the teachers in classrooms and school libraries, put educational research into action (Hattie, 2012). With action research, teachers use research literature and research methods to pursue innovations in their practice (Kuntz, et al., 2013; Parsons & Brown, 2002; Postholm, 2009; Wideman, 2011).

Though action research holds the promise of restoring professionalism to teaching and improving student learning outcomes in the classroom and library (Brandt, 1993; Todd, 2015), it is not widely practiced by educators. Instruction in action research provided to pre-service school librarians has limited impact because they do not have a classroom in which to conduct research. They are not able to act on what they learn until they are in their own libraries. In-service school librarians have a facility and often are familiar with action research, but lack confidence and support. These librarians routinely alter their practice in response to the needs of students. However they rarely collect data on their alterations, might not conduct their evidence gathering in a systematic way, and do not have a venue for sharing results and gaining feedback on these efforts. Collaborative partnerships between librarians and university researchers can remedy these short comings (Bruce, Flynn, & Stagg-Peterson, 2011).

University researchers can provide concepts and vocabulary related to conducting research. They provide advice, encouragement, and confirmation as well as warn of potential threats to librarians' action research studies. The communication between partners builds competence, while the school librarians maintain the agency to determine which practices to develop and enhance (Postholm, 2009).

For school librarians new to action research, designing and conducting their first action research studies can be a source of anxiety over the rigor required to effectively collect and analyze data. A partnership with university researchers that provides opportunities for multiple cycles of action research builds librarians' expertise and confidence in their ability to

make judgments based on the demands of their particular situation (Bruce, Flynn, & Stagg-Peterson, 2011; Kuntz, et al. 2013; Postholm, 2009). They also gain experience evaluating the success of their interventions.
The results presented here are of a collaborative partnership that required school librarians to conduct four action research studies. School librarians proved to be ideal candidates for these partnerships. They are likely to be more familiar with research studies, they encounter students inside and outside of normal class periods, they interact with all teachers in the school, and they have access to abundant resources. The objective of this study was to give librarians sufficient experience so that the issues related to how to conduct an action research study diminish, and the objectives of improving practice take the forefront. This study involved having in-service school librarians select and conduct four action research projects each in their own schools over one academic school year.

This study describes a collaborative partnership between a single university researcher and 39 school librarians who conducted a combined total of 156 action research projects. Aggregate results from these action research projects are presented. This includes an overview of the projects chosen by the school librarians, outcomes from these projects, and specific examples of the types of studies completed. Along with this data, results from a follow-up survey with the librarians will be included that probes how becoming action researchers helped the librarians gain credibility in their schools, increase collaboration with teachers, and gain prestige in the eyes of their administrators. In a time of rapid change, this type of concrete evidence shouts out on behalf of the success of these innovative school librarians.

Method

The study was designed to demonstrate a means for in-service school librarians to gain the experience necessary to view themselves as action researchers. The goal of requiring 4 action research projects was to move recipients beyond the stage of familiarity with action research to create a mindset where they identified themselves as action researchers. The impacts of the action research projects on library services, student learning, and collaboration with teachers are presented. This is a mixed methods study employing different but complementary data, offering the potential to either merge or compare and contrast data (Creswell & Clark, 2007). The method also employed a survey which probed the impact of conducting action research on the librarians' sense of professional efficacy. Several types of data are tallied. Centrality measures were employed for the survey results. The study is based on responses from a non-random, opt-in, sampling of librarians in rural schools.

Participants

The 39 school librarians who participated in this study are teachers who gained additional certification to serve as school librarians by passing a PRAXIS II exam. The PRAXIS II exam, developed by the Educational Testing Service (ETS), assesses content area proficiency, measuring "knowledge of specific subjects that K–12 educators will teach" (ETS, 2011). This path to additional certification was adopted in some parts of the United States as a way to address the shortage of school librarians. However since these 39 librarians have not taken any formal coursework, they were aware that they were often underperforming in their roles and leaving their schools and communities underserved. Because many rural school districts are low income (U. S. Census Bureau, 2009), these

librarians lacked economic resources to pay for the coursework that would adequately prepare them for the role of school librarian (Reeves, 2003). The 39 PRAXIS II certified school librarians who produced the action research projects for this study received scholarships through the Laura Bush 21st Century Librarian Program Grant from the Institute of Museum and Library Services (IMLS). This $843,000 grant provided scholarships to these school librarians, making it possible for all 39 of them to obtain master's degrees in Library Science and Information Services. These librarians reflected the gender and racial characteristics of the population of rural teachers in the Midwest United States, predominantly white and female.

Project Timeline

The librarians were divided into two graduate student cohorts. Nineteen students were in the first cohort and 20 students were in the second. The two cohorts of practicing school librarians conducted action research projects in their schools. The study period began in the Spring, 2012 when the 19 librarians in the first cohort took an online course in action research where they worked in groups to design their first study. In this course participants studied evidence-based practice (Geitgey & Tepe, 2007; Todd, 2003) and action research (Parsons & Brown, 2002). Then in Fall, 2012 and Spring, 2013 each school librarian in the first cohort completed four action research projects. Seventy-six action research studies were completed by cohort one. These students received their master's degrees in Summer, 2013.

The 20 school librarians in the second cohort took their online course in action research in Spring 2013 where they worked in groups to design their first study. Then in Fall, 2013 and Spring, 2014 these school librarians completed four action research projects each. Eighty action research studies were completed by cohort two. These students received their master's degrees in Summer, 2014.

In December, 2014 and January, 2015 all 39 of the school librarians (both cohorts) were invited to take the action research survey. The survey focused on uncovering whether or not the librarians gained a sense of professional efficacy as a result of conducting four action research projects. Nineteen of the school librarians (49%) responded to the survey.

Setting

The author of this report was an internal co-Principal Investigator on the IMLS grant whose responsibility it was to teach the course in action research to grant recipients, oversee the action research component, and serve as the university partner to mentor the school librarians through their research. All teaching and mentoring activities were conducted online. The librarians chose and designed each of the four action research projects and implemented them according to their own schedules and the needs at their schools.

Intervention

The grant provided a unique opportunity to observe how participating librarians put into practice what they learned from their coursework. Having 39 practicing school librarians conducting action research provided an opportunity to examine the impacts of action research in authentic school settings. Each action research project was conducted two phases. Phase one was a four step process used to create an action research plan: first, the

school librarians identified an area where their practice could be improved; second, available educational research on the issues related to that practice was reviewed in order to find a promising intervention to ameliorate the issue; third, methods for collecting data to reveal the success or failure of the intervention were identified and selected; and fourth, a study was designed to implement the intervention and collect data. At the end of phase one, the university partner reviewed the action research plans and provided feedback to ensure the planned projects were ethical and practical.

For phase two the action research projects were conducted and a report was generated based on the plans from phase one and the results of the studies. There were three steps in phase two. First, the results of the action research study were described; second, the librarian reflected on the plan and identified the potential threats to the study. Third, the results of the studies were described. The reports for the action research projects were reviewed by the university partner, and the school librarians were encouraged to share their results with their administrators.

Data

Online portfolios of the four action projects conducted by each school librarian were used as data for this study. StoneSoup (2013), an xForms system developed by the author using the PERL programming language, was used as an online portfolio system. The portfolios served multiple purposes. The librarians could edit their action research plans, so planning could be done iteratively. The portfolios kept reports from all four plans in a single online location that was easy for the librarians and the university partner to access. The reports provided a narrative about each action research study and a means upon which to base feedback from the university partner (Kuntz, et al., 2013; Stuart, 2012). Also, the reports provided data that was downloaded to a spreadsheet in order to analyze the substance and success of the projects conducted. Additionally, each portfolio entry could be displayed as a webpage, serving as a means for sharing information about the action research projects with others in the school, including administrators. They remain as a record of the action research studies.

Email was also used extensively to support projects and was the medium for providing feedback and guidance about projects. Once the feedback was incorporated into the action research plans, projects were given approval and were recommended for implementation. Email provided a written record of what transpired between the university partner and the practitioner. The same process occurred for the action research reports; results were reviewed by the university partner to evaluate the validity of the findings. The portfolio system provided the narratives and data for projects while email kept the record of the process of collaboration used by the librarians and the university partner.

An invitation to take the survey, herein referred to as the ‘action research survey,’ was sent via email to all 39 graduates of the IMLS cohorts in the semester after all librarians had finished their graduate coursework. The survey used twelve questions to explore whether or not the school librarians gained a sense of professional efficacy as a result of conducting four action research projects. An answer was required for all survey questions. The survey was administered using Google Forms. The questions are:

1. *Have you conducted any action research projects since completing your program?*
2. *Do you plan to conduct an action research project this school year?*
3. *Have you discussed action research with other educators in your building?*

4. *Do you feel competent to conduct action research?*
5. *Did your action research make you feel more empowered in your school?*
6. *Did having evidence of your success with action research give you confidence to share your findings?*
7. *Do you feel you gained credibility as a result of conducting action research?*
8. *Did conducting action research lead to more collaboration with other educators in your school?*
9. *Do you feel you gained prestige in the eyes of your administrator because you conducted action research?*
10. *Would you like the results of your action research to influence how you are evaluated as a school librarian?*
11. *Do you think other teachers should conduct action research?*
12. *What do you think of the role of action research in teacher evaluation?*

Data Analysis

Qualitative data were analyzed using the grounded theory method in order to discover theoretical concepts from the data itself (Strauss & Corbin, 1998). Using a constant comparative method, data were simultaneously analyzed and coded (Taylor & Bogdan. 1997). Then using this open coding, another analysis looked for "leads, ideas, and issues in the data themselves" (Charmaz, 1983, p. 113). The results of the qualitative analysis provide a list of attributes of the action research studies that could then be analyzed quantitatively and presented in the Results section.

Quantitative data about the projects were extracted from the portfolio system using a spreadsheet and then were tallied using spreadsheet formulas. Tallies from the spreadsheet tables provided data on the aggregate attributes of the action research projects. No measures of centrality or inferential statistics were used in this part of the analysis. Measures of centrality were used to analyze the survey data.

No consent was required to present the aggregate data. However consent was obtained from the librarians in order to share specific examples of action research projects. Consent was also obtained from all survey respondents, so survey results can be presented here.

Since the data are based on a non-random sample, a margin of error cannot be computed, and the results are not generalizable. Effect size is not calculated and data cannot be used in a meta-analysis. Results from action research apply in improving local conditions.

Results

For table 1 below five samples of projects were chosen in order to illustrate the scope of the topics addressed through the action research projects chosen by cohort 1. These descriptions are condensed to fit in a table format. They provide the minimum of data on the projects; the topic, the issue to be solved, the intervention tested, and the results. Three of the projects were aimed at increasing book circulation. One of the projects was directed at increasing teachers' use of the library. A fifth was directed at improving student behavior.

Examples of Action Research Projects			
Topic of Study	**Issue**	**Intervention**	**Results**

Increase circulation for themed books.	Themed books in the collection not circulating	Display Thanksgiving Day books on top of a bookcase	550% increase over last year's circulation of these books.
Increase students' voluntary reading of non-fiction books	Students in grades 7-12 are not sufficiently interested in nonfiction books: for 2 quarters circulation = 0	Pair popular fiction and nonfiction books	Circulation increased from 0 to 8 books.
Increase elementary library book circulation	Kindergarten & 1st grade book choices limited	Move to open-access book check out for all grade levels	Books checked out increased by 33%
Teacher In-service	Teachers not using library resources	15 minute in-service on using the library catalog for 15 pre-K through 6th grade teachers	-11 teachers = 73% increased checkouts -3 teachers = no change -1 teacher = decline in use
Reduce classroom disruptions	Disruptive 2nd graders in the library	Four learning centers added to library	80% reduction in behavioral redirects

Table 1: Five samples of the action research projects conducted by the school librarians.

Table 2 depicts aggregate data on the results of the action research projects. One hundred percent [N = 156] of the action research projects were complete as of July 20, 2014. In 80% [N = 125] of the studies, results were positive. The attempt to improve practice worked as determined by the librarian from the data and verified by the university partner. In 20% [N = 31] the outcome of the project showed no measurable improvement or negative results. In these cases the librarians offered an explanation and a plan for improving the approach or methods of their studies.

Forty percent [N = 63] of the projects involved collaboration of some kind with teachers. These collaborative projects had almost the same ratio of positive to negative outcomes (81% positive [N = 51 or 33% of 156 projects] and 19% negative [N = 12 or 7% of 156 projects]) as the other action research projects.

Eighty-five percent [N = 133] of the projects were targeted toward improving student learning. Thirteen percent [N = 21] involved improving services to teachers. One percent [N = 2] improved services for students and teachers. The most common goal of the action research

projects, 49% [N = 76], was to make an improvement that impacted the whole school. However, 45% of the projects [N = 70] involved smaller groups of students or classroom students. Other projects, 6% [N = 10] were small scale, sometimes repeating the same research design with different subjects, such as individual, struggling students.

Thirty-one percent of the projects explored the impact of technology use [N = 48]. For twenty-three percent of the projects [N = 36], the librarians elected to adapt a survey for use by their students to gather evidence of change in the use of library services. The survey, administered at the beginning and end of the spring semester, contained twelve questions. It was modeled on one developed by Todd and Kulthau for the Ohio Educational Library Media Association (OELMA) study *Student Learning Through Ohio School Libraries* which was conducted in 2002 and 2003 (as cited in Whelan, 2004). Thirty-two percent [N = 50] of the projects were aimed at improving specific, targeted library services. Five percent [N – 8] involved a professional development project for teachers.

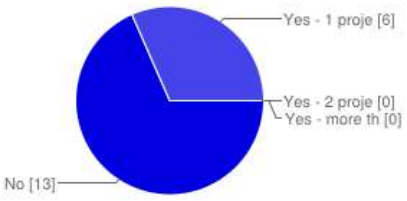
AR Projects	**Percent**	**N**
AR Projects Completed	100%	156
with Positive Outcomes	80%	125
with Negative or Neutral Outcomes	20%	31
Schools with positive outcomes for => 1/2 of the action research projects	100%	39
Collaborative Projects		
involving Collaboration with teachers	40%	63
with positive outcomes	33%	51
with Negative or Neutral Outcomes	7%	12
Target Audience of Projects		
Students	85%	133
Teachers	13%	21
Students and Teachers	1%	2
Breadth		
Whole School	49%	76
Group or Class	45%	70
Individual	6%	10
Focus of Projects		
Technology	31%	48
Overall Library Improvement	23%	36
Professional Development	5%	8
Targeted Library Services	32%	50
Other	9%	14

Table 2. Aggregate results of the action research projects

Action research survey results were compiled between December 2014 and January 2015. Of a total population of 39 school librarians, 19 completed the survey, for a response rate of 49%. The results are presented below by question

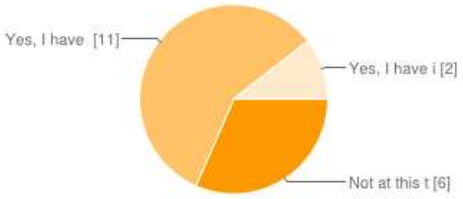
1. *Have you conducted any action research projects since completing your program?*

Response	N	%
No	13	68%
Yes - 1 project		6
32%		
Yes - 2 projects		0
0%		
Yes - > 2 projects	0	0%



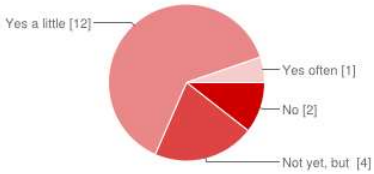
2. *Do you plan to conduct an action research project this school year?*

Response	N	%
Not at this time	6	32%
Yes, I have an idea		
for an AR project		11
58%		
Yes, I have ideas for	2	11%
> 1 AR project		



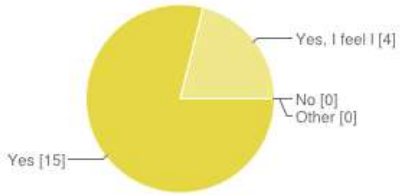
3. *Have you discussed action research with other educators in your building?*

Response	N	%
No	2	11%
Not yet, but I will	4	21%
Yes a little	12	63%
Yes often	1	5%



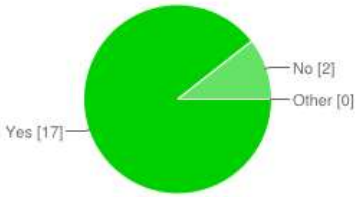
4. *Do you feel competent to conduct action research?*

Response	N	%
No	0	0%
Yes	15	79%
Yes, I feel like I am an	4	21%
action researcher		
Other	0	0%



5. *Did your action research make you feel more empowered in your school?*

Response	N	%
Yes	17	89%
No	2	11%
Other	0	0%

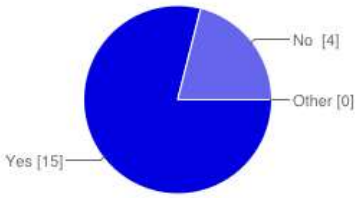


6. *Did having evidence of your success with action research give you confidence to share your findings?*

Response	N	%
Yes	19	100%
No	0	0%
Other	0	0%

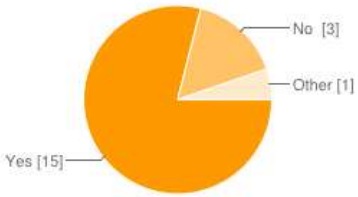
7. *Do you feel you gained credibility as a result of conducting action research?*

Response	N	%
Yes	15	79%
No	4	21%
Other	0	0%



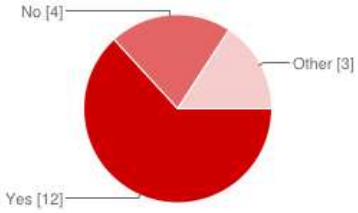
8. *Did conducting action research lead to more collaboration with other educators in your school?*

Response	N	%
Yes	15	79%
No	3	16%
Other	1	5%



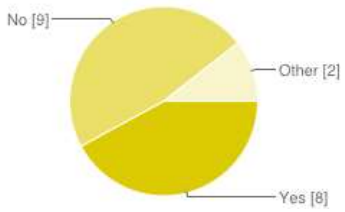
9. *Do you feel you gained prestige in the eyes of your administrator because you conducted action research?*

Response	N	%
Yes	12	63%
No	4	21%
Other	3	16%



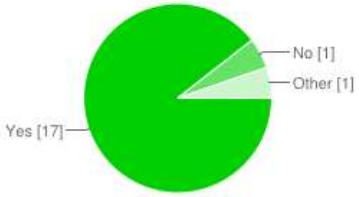
10. Would you like the results of your action research to influence how you are evaluated as a school librarian?

Response	N	%
Yes	8	42%
No	9	47%
Other	2	11%



11. Do you think other teachers should conduct action research?

Response	N	%
Yes	17	89%
No	1	5%
Other	1	5%



12. What do you think of the role of action research in teacher evaluation?

Response	N	%
No opinion	**3**	16%
Action research makes too much extra work for teachers and librarians	**0**	0%
It could be included in teacher and/or librarian evaluations	**6**	32%
It should be included in teacher and/or librarian evaluations	**1**	5%
Action research promotes continuous quality improvement	**14**	74%
If more educators conducted action research it could change the culture of the school	**7**	37%
Action research empowers teachers	**7**	37%
Other	**2**	11%

Discussion

Aggregate results from the action research projects indicate that the partnership between school librarians and the university mentor were successful for a number of factors. Having a mentor facilitated the completion of all action research projects, as demonstrated by the 156 completed projects. A key role of the mentor was to provide advice on data collection methods and interpretation. Some of the librarians set large goals for success and did not view more modest successes as positive. For example, if a librarian who had not collaborated with teachers in the past set a goal to collaborate with seven teachers, she did not initially see that creating collaborative projects with 3 teachers meant the action research project was a success. Thus mentoring was needed not only in planning the action research projects, but also in evaluating the results.

Eighty percent of the action research projects had positive outcomes. This translates to improvement in library services in all schools. This is more noteworthy considering almost half of those projects involved activities that impacted the entire school. Collaboration with teachers occurred 40% of the time, and 81% of the results of those action research projects were positive. While improving library services was the focus of many projects (55%), almost a third of the projects (31%) involved promoting the use of technology.

While the survey results are not generalizable, they do indicate further study might be desirable in exploring the professional efficacy of school librarians who conduct action research. While the 51% of librarians who did not chose to complete the survey might have held very different opinions, those who did respond indicate that the experience of conducting action research was empowering. A goal of having the school librarians conduct 4 action research projects each was to provide them with enough experience so that they felt comfortable in the role of action researcher. All (100%) of the school librarians felt they were competent action researchers, and they all felt (100%) confident to share the results of their projects.

Almost two-thirds of the school librarians (63%) are talking about action research with other educators in their schools. Seventy-nine percent felt that conducting action research promoted more collaboration with these peers. When asked directly if they felt action research was empowering, 89% indicated it was. Seventy-nine percent felt they gained credibility in their schools because they conducted action research. Almost two-thirds of the librarians felt they gained prestige in the eyes of their building administrator (in the United States these are their supervisors, the building principals).

While 89% of the school librarians felt other teachers should conduct action research, they were more hesitant when it came using action research as a way to evaluate l job performance. Reasons given for this include a concern that being evaluated would cause practitioners to choose less daring projects. It would also increase fear of failure. Though there is a potential for using action research as a performance assessment, these concerns are valid and indicate that to obtain the positive results of action research, the projects need to be conducted without consequences for failure.

A related point of note is that only 37% of the librarians saw that action research could change the culture of a school. If this effort is repeated, it is recommended that a sufficient history of action research as an agent for change be taught along with the research methodology. Seventy-four percent of the librarians saw that action research promotes continuous quality improvement, but did not make the connection between that and improving the culture of the school.

A final significant item was revealed in question 12. None of the school librarians felt that action research made too much extra work for teachers or librarians. This might be an outcome of having conducted four projects, as the effort might be seen to diminish when the uncertainty of trying a new process was eliminated. The course instruction in action research concentrated on improving practices, rather than methodological rigor. The rigor was enforced during the mentoring, and was thus was more likely to be viewed as reasonable and practical, making action research seem a more routine aspect of practice.

Possible Implications

Like other teachers, librarians are typically more interested in improving their practice than in reforming the educational system (Adler, 2003). However there is a moral imperative in the current culture of accountability to reverse direction; and while the librarians in this study were engaged with the desire to use action research to improve their practice, those who support them in academia have a concern for the value of practitioner research in academia and among policy decision-makers. Teachers, as front line workers, are not credited for being knowledge creators. "What is necessary for successful teacher research are studies that respect teachers' voices, allow for criticism, collaboration, and intellectual stimulation, and induce ownership of the research process" (Bradley-Levine, Smith, & Carr, 2009, p. 159). When this happens, the impetus of the culture of accountability can be reversed, becoming bottom-up, not top-down, as teachers and librarians regain the power of their professionalism (Todd, 2015). For this reason the author recommends that instruction in action research be included in all teacher and school librarian preparation programs.

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