Action Research Empowers School Librarians

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Abstract

Successful school library programs occur through careful planning and reflection. This reflective process is improved when it is applied in a systematic way through action research. The action research described in this paper enabled school librarians to reflect based on evidence, using data they had collected. This study presents examples of the types of projects chosen by the librarians, aggregate outcomes from 156 action research projects conducted by thirty-nine school librarians over a two-year period, and the results from a follow-up survey completed by nineteen of the thirty-nine participating school librarians. This study was designed to determine whether the school librarians viewed their action research as being feasible, valuable, and empowering. The review of literature and the Implications section of this report are framed using Susan E. Noffke's concept that there are three families of action research: the professional, the personal, and the political.

Introduction

In a climate of school accountability evidence of successful practice is required by administrators and policy makers (Lucey and Hill-Clarke 2008; Vaughn 2013). As reflective practitioners, teachers and school librarians have a feel for what makes students successful; action research (AR) provides a way for educators' reflection to be systematic and evidence-based. The data AR provides can be used for decision making regarding instruction and for teachers' and school librarians' self-evaluation, while the body of evidence produced by AR can be used for outside evaluation (Gordon 2009; Todd 2015; Wideman 2011).

This study examines data from thirty-nine school librarians who each conducted four action research projects in their own schools in rural districts in the midwestern United States, for a total of 156 projects. The aggregate results of their inquiries add to the body of literature on how action research improves practice. A follow-up survey with these librarians was conducted to determine if, through their experience practicing action research, they found AR to be feasible, believed it adds value to their practice, and felt increased confidence in their professional efficacy, along with improved skills as action researchers. The review of literature in the next section frames this study and demonstrates how, in addition to building knowledge and

improving practice, engaging in action research contributes to social progress by improving schools.

Review of the Literature on Action Research

Purpose and Value of Action Research

Action research serves as a bridge between research and practice (Parsons and Brown 2002; Pine 2009). Over one hundred years of educational research is available, but much of this research has been ignored by practitioners who felt that research is the "business of experts" (Corey 1953, 71). Through action research administrators, teachers, and school librarians can access and apply this evidence from research (Todd 2003). Action research is a "process of investigation based on development, execution, and evaluation of experiments (Wideman 2011, 52). Using AR, practitioners learn how to measure improvement as they study the consequences of innovations in their own specific context (Corey 1953).

In addition to educational contexts, action research is used to improve practice in a variety of professional settings, such as social service sectors and health care environments (Carroll et al. 2012). John Collier, who was the Commissioner for Indian Affairs in the United States under President Franklin D. Roosevelt, used the term "action-serving research" to describe how self-government for Native Americans was promoted when the self-felt needs of these communities were addressed by practitioners who used a scientific approach to problem solving, resulting in positive social change (Noffke 1997; Pine 2009). Collier believed that this benefit is the result of collaboration among community members and between community members and consulted experts. This early recognition of the benefits of using a scientific approach to problem solving attests to the longstanding association of both practitioner-driven inquiry and collaboration with action research (Gordon 2006; Pine 2009; Sandretto 2007).

Kurt Lewin coined the term "action research" when studying how communities improved intergroup dynamics to address complex problems such as racism in the 1930s and 1940s (Pine 2009). Lewin was influenced by American pragmatist philosophers, particularly John Dewey, who believed in the transformative power of a democratic process (Adelman 1993). Lewin is credited as outlining the steps of action research as being: identifying and defining a problem through group discussion, investigating its roots and possible solutions, planning action to take, evaluating results, revising the plan, and taking another cycle of action (Adelman 1993; Gordon 2009; Pine 2009). Lewin believed that through cycles of AR practitioners are able to generalize what they learn for use in future situations (Corey 1953; Pine 2009).

In the 1950s Stephen M. Corey, working with others when he was the director of the Horace Mann Institute of School Experimentation and later the dean of the Teachers College at Columbia University, envisioned educational action research as a way for teachers and administrators to "make better decisions and engage in more effective practice" to bring about positive change in schools (1953, 6). In applying Lewin's steps to educational situations, Corey found:

> It is entirely possible to improve the clarity with which practical problems are identified, the creativeness with which more promising practices are hypothesized, the skill with which presumable better practices are implemented, the ingenuity with which the worth of the practices is obtained, and the

penetration and sagacity of generalizations resulting from this evidence. (1953, 18)

In 1966 the descriptor "action research" was added to the Education Resource Index Clearinghouse (ERIC). In keeping with AR's social activist roots, one of the first entries using this descriptor was a speech by Martin Luther King. The ERIC descriptor of action research defines it as: "Research designed to yield practical results that are immediately applicable to a specific situation or problem." Because this definition applies to so many AR contexts, it might be as precise as the definition can be without leading to "contested terrain" (Noffke 1997).

Susan E. Noffke has warned against trying to limit action research through definitions. A danger in academic circles is that definitions provided by researchers posit action research in a way that supports its use in their studies but not in other contexts. One solution is to provide an understanding of the history and growth of AR for the purpose of moving the discussion away from "correct" definitions and "toward clarity of purpose among those who would use the term" (1997, 308).

Noffke suggested a way to discuss AR in terms of its purpose—to view action by discussing it in terms of three distinct family lineages that share characteristics in a way that resembles heredity (Noffke 1997; Sandretto 2007). With this frame action research draws nourishment from its roots as a paradigm for social progress across a broad spectrum of activities. Noffke referred to the lineages as the professional, the personal, and the political (1997). The professional lineages align with AR studies intended to increase generalizable knowledge and to produce results intended for publication in academic journals. The personal lineages are the AR investigations that are intended to increase an individual's understanding of his or her own practice, leading to more-effective practice. Findings from these personal studies are not intended for publication, and they do not fall under the purview of institutional review boards the way that studies from professional action research do (National Science Foundation n.d.). The third lineage, political action research, is intended to produce social progress. Historically, this is where action research has its roots. Because education is inherently a political sphere, AR in education seeks "to create social change toward greater social justice through the use of research" (Noffke 1997, 305).

Though three families of AR are recognized, they are not distinct from each other; in fact, they frequently overlap. These families share hereditable traits in much the same way as human families, in which characteristics like eye color, hair color, and temperament might show up in any branch of the family tree. The traits might be prominent in one branch, but it is not unusual to encounter them in all branches. In the same way, the traits of action research appear in all three families. Common traits in all lineages include using steps from the scientific research process, the production and generalization of knowledge, practitioner control over research projects, practitioners conducting research, collaboration between practitioners and collaboration between practitioners and experts, and goals for producing positive social change.

Noffke's (1997) analogy to families focuses on the purpose of conducting action research rather than on definitions that attempt to define action research in relation to a research methodology. Family lineages are used in this study to explore whether in-service school librarians who have practiced action research find it feasible, valuable, and empowering. The first section of the review of literature looks at the lineage of professional action research in relation to this study; the second explores possible outcomes when personal action research is conducted in a school, and the third section presents characteristics of political action research that connect this study to its social activist roots. While Noffke's three families of action research are distinguished from

one another in the discussion of literature below, these distinctions are intended to provide clarity for this particular study, not for definitive purposes. As Noffke noted: "what is vital is to see the action research family as a representation of a series of contestations within the interconnected spheres of the professional, personal, and political" (1997, 33).

Professional Action Research

Professional action research is research that adheres to the naturalistic research methods required by academic conferences and journals. The body of educational research has been building for a century, but for much of this time positivist methods were considered the standard in that they lent themselves to statistical methods that described the degree to which findings could be generalized to specific populations. Positivistic researchers take the objective stance of a disinterested party, but this perspective has both benefits and detriments. A benefit is that this objective perspective reduces bias in the research. A detriment of positivist methods is that they depend on a controlled experimental environment. However, social conditions, particularly in schools, are complex. The more controlled the environment, the more reliable the statistics, but the less authentic the setting.

In the last few decades naturalistic methods of inquiry have received broad acceptance in academia. Naturalistic research methods are recognized as contributing a type of contextual knowledge that is missing from positivist studies. Because naturalistic research seeks to uncover the knowledge of and about members of subject communities from their own perspective and through self-directed actions, the family line of professional research action research can be situated here.

Acceptance of action research by the academic world was slow because, initially, it was primarily associated with the two other family lineages of action research, the personal and the public, which are less likely to meet the rigorous methodological standards typically applied to academic research. In 1996 ERIC had applied the descriptor "action research" to about one thousand academic articles (Noffke 1997). However, action research has grown in popularity as a professional research method in the last two decades. By 2015 ERIC has assigned the descriptor to over five thousand more articles.

Action research articles in educational journals tend to fall into two categories: articles that describe a method for conducting research and articles that describe how educational experts, such as faculty in teacher preparation programs, collaborated with practitioners to improve an aspect of teacher's practice. Since educational faculty discourse through articles in academic journals, professional action research has been discussed more than personal and political action research.

In 1953 Corey pointed out that academic research has less of an influence on practice in schools than academics expect. Teachers are less interested in generalizable knowledge than in how they can solve the problems their students face on a day-to-day basis. Teachers are more likely to turn to colleagues for ideas and suggestions. So while educational researchers have produced a vast amount of knowledge, its application falls short of its promise as a means to improve teaching in practice.

Personal Action Research

The purpose of personal action research is to improve local conditions. Educators who are reflective practitioners observe how learning occurs in the classroom and school library and consider ways to improve it (Todd 2015). With student success as their goal, they consult research and collaborate with other teachers. This reflective process is much improved when it is applied in a systematic way through personal action research. With personal action research, educators, including school librarians, consult research literature and then use a scientific approach to pursue innovations in their practice (Kuntz et al. 2013; Parsons and Brown 2002; Postholm 2009; Wideman 2011). In addition to improving practice, personal action research provides a way to demonstrate and justify classroom practices and school library programs by providing evidence in practice (Gordon 2006, 2009; Loertscher and Woolls 2001; Todd 2015). As reflective practitioners, teachers and school librarians have a sense of what is successful in their classrooms and libraries, but the evidence provided through personal action research provides documentation of what does and does not work.

Personal action research shares family traits with professional action research. Knowledge is produced and is generalized; however, rather than results being generalized across populations, knowledge is generalized for future use by the practitioner and colleagues in the immediate community (Corey 1953). Because results are generalized to the future rather than to larger populations or different contexts in the present, personal action research differs from academic research in regard to standards for validity and reliability (Bruce, Flynn, and Stagg-Peterson 2011; Corey 1953; Gordon 2009). For example, attempts to enlist a representative sample of research subjects are not necessary; institutional review boards do not need to oversee studies; effect size is not determined; and the results do not go through a formal peer-review process. Noffke referred to personal action research as being "writ small enough for practitioners to use" (1997, 307).

However, action research does adhere to standards of naturalistic inquiry. Personal action research studies do need an overall plan before they commence, and a hypothesis drives the inquiry. Data to be collected is identified, and expected relationships between variables are suggested. Methods for collecting data are described along with methods for analyzing the data (Lincoln and Guba 1985). In personal action research threats to the validity of the conclusions are also identified. The classroom teacher or school librarian, as an action researcher, addresses threats as a matter of professionalism and accountability to colleagues and students. Research results are reported through discussions with colleagues in the school community. Reports that are created are a means of recordkeeping; these reports also enhance collaboration, preserve the research question and an account of the method used, and preserve conclusions, as well as the evidence on which conclusions are based. This systematic written approach provides evidence of continuous improvement in practice (Ballard 2015; Gordon 2006, 2009).

Another way personal action research differs from professional action research is that personal action research is designed to employ the best approach to improve practice rather than to generate and confirm theories. Because of this design focus, personal action research plans are not treated as inviolate; they evolve and are adapted when needed in order to improve student outcomes (Corey 1953). Corey compared professional research with action research:

> The value of the [traditional research] is determined by the amount of dependable knowledge it adds to that already recorded and available to anyone who wants to familiarize himself with it. The value of action research, on the other hand, is

determined primarily by the extent to which findings lead to improvement in the practices of the people engaged in the research. (1953, 12)

Because the results of personal action research are not for public consumption, AR does not fall under the jurisdiction of institutional review boards (Korenman n.d.; National Science Foundation n.d.). Federal regulations do not apply to routine educational practices that do not result in a publication. However, children, as human subjects, are protected. Students are protected by the school community that reviews, discusses, and applies the results from the research. Oversight by institutional review boards (IRBs) requires gaining the consent of parents and students; in contrast, personal action research does not. Because the time-consuming and complex aspects of the IRB process can be eliminated in personal action research, it is less burdensome for the practitioner. Corey has pointed out that skill in conducting research is acquired only through practice. When the process is less burdensome, it is easier for educators, including school librarians, to practice and gain skill and confidence as action researchers. "What this means is that those who are interested in seeing research contribute more substantially to the improvement of American education must do everything within their power to make a scientific attack on practical problems interesting, rewarding, and attractive to large numbers of people" (1953, 18). John Hattie (2012) pointed out that progress in student achievement occurs when the frontline workers, the educators in classrooms and school libraries, put educational research into action.

There is a place in personal action research for partnerships with university faculty who can provide support in a number of ways. For example, they supply concepts and vocabulary related to conducting research, along with advice, encouragement, and confirmation. For teachers and school librarians new to action research, designing and conducting initial action research projects can be a source of anxiety over the rigor required to effectively plan the study and to collect and analyze the data (Bradley-Levine, Smith, and Carr 2009). A partnership with university faculty provides opportunities to build practitioners' expertise and confidence in their ability to make judgments based on the demands of their particular situation (Bruce, Flynn, and Stagg-Peterson 2011; Kuntz et al. 2013; Postholm 2009). Practitioners also gain experience evaluating the success of their interventions. University faculty can warn classroom teachers and school librarians about potential threats to personal action research studies. Providing the practitioner maintains the agency to determine which practices to develop and enhance, and the purpose of the research for all partners is to improve practice, the family resemblance is to personal action research (Noffke 1997; Postholm 2009).

Political Action Research

Action research emerged in the 1940s as a form of social activism based on improving local practice (Adelman 1993; Adler 2003; Hadfield 2012; Sandretto 2007). Following this tradition, teachers can use action research to provide evidence of their professionalism and, as a byproduct, lessen the impact of teacher disempowerment that arises in a top-down culture of accountability. The intent of accountability and teacher evaluation is to make teachers more effective, but implementation of effectiveness assessment and accountability consequences have devolved into a key moral problem in education (Lucey and Hill-Clarke 2008). Teacher effectiveness is a laudable goal, in that it accounts for as much as 30 percent of the variance in student learning (Hattie 2012; Hemric, Eury, and Shellman 2010). However, when teacher accountability is directed from the top down through mandates from central and local governments, the results often run counter to the goal (Nichols and Parsons 2010). Teachers' knowledge and experience

are devalued; their opinions are mistrusted; and, in the eyes of the public, the need for external accountability is an indication that teachers are not effective (Nichols and Parsons 2010). Action research provides evidence of the effectiveness of teachers and school librarians that is produced by the practitioners themselves through self-evaluation (Adelman 1993; Gordon 2009; Todd 2015). While action research is not a sole means of educator evaluation, it is a valuable addition that could make the process more democratic.

When there is excessive external control and teachers' professionalism is questioned, their welfare is impaired (Lucey and Hill-Clarke 2008). A de-skilling of teaching takes place as standardization increases hegemony; diagnostic teaching practices are abandoned; and rote, scripted, "teacher-proof" programs developed by large corporations are adopted (Corey 1953; Nichols and Parsons 2010; Vaughn 2013). Rather than relying on the discriminating, professional judgment of the majority of members of the educational community, policy is made based on political climates mediated by commodification. The result has not led to an increase in student learning, particularly among those whose needs the centralized initiatives were intended to address: rural students, students living in poverty, and those from homes where English is a second language (Vaughn 2013). Instead, teachers lack influence over the policies that control their practice (Lucey and Hill-Clarke 2008) and the resources they need to do their work. These resources include support from stakeholders, opportunities to explore and implement research-based practices, time to build collaborative teaching communities, and the instructional decision-making authority necessary to build expertise (Lucey and Hill-Clarke 2008; Nichols and Parsons 2010; Brandt 1993). Another outcome of teacher disempowerment is the lack of teacher retention, particularly of innovative educators (Lucey and Hill-Clarke 2008). Autocratic mandates might work for the more compliant teachers but not for those motivated by autonomy (Deci and Ryan 1985; Pearson and Moomaw 2005).

Many views of professionalism exist simultaneously. In athletics and the arts professionalism means earning a living from an individual's activities in the field. In education it frequently implies that teachers pursue lifelong learning and are empowered with autonomy over decision making and problem solving (Brandt 1993). Professionalism in education also means taking responsibility for both positive and negative student outcomes (Martin, Crossland, and Johnson 2000). To be responsible is to think critically about beliefs and actions. This type of self-reflection introduces critical thinking, which questions assumptions and self-knowledge (Hemric, Eury, and Shellman 2010). This self-reflection is the groundwork for identifying problems in instructional practice and occasions for improving student outcomes. While high-stakes evaluation by administrators might diagnose a problem, educators' taking professional responsibility improves student performance (Mielke and Frontier 2012).

Within the framework of professionalism, accountability is an intrinsic rather than external force. For educators, including school librarians, professionalization is synonymous with empowerment. Empowerment cannot be mandated, as it requires educators to take charge of their own growth and resolve their own problems (Martin, Crossland, and Johnson 2000). When teachers understand their own practice and control decisions over needed improvements, they are intrinsically motivated to pursue expertise. "The most effective supervision and evaluation systems empower teachers to accurately assess their own practice and self-diagnose areas for growth" (Mielke and Frontier 2012, 12).

As in all lineages of action research, political action research is a spiral of activity that begins when a problem or a possible improvement to practice is identified. At that point, data are collected by practitioners and shared in the community; a reflective analysis is conducted; data-

driven action planned; and the spiral restarts (Adler 2003). Political action research projects can be large, aimed at improving a school- or district-wide practice, or small, aimed at improving learning for a single child.

As a byproduct of political action research, the data provide evidence of educators' professionalism, including diagnostic ability, use of educational research, and innovation when addressing issues in teaching and learning. In this way, political action research supports a culture of accountability that arises from educators themselves rather than being mandated from above (Hemric, Eury, and Shellman 2010; Lucey and Hill-Clarke 2008; Mielke and Frontier 2012; Pine 2009). By making the impact of their continual efforts to improve instruction visible to themselves and others, AR increases teachers' and school librarians' efficacy while it "helps to elevate the academic climate of a school" (Gordon 2006, 6; see also Hemric, Eury, and Shellman 2010). Educators become less defensive about reflective practices and more open to sharing and taking risks with their instructional strategies, developing habits of inquiry that can be contagious in a school environment (Bradley-Levine, Smith, and Carr 2009; Pine 2009).

Political action research is the family lineage that most resembles AR's founding as a means of social activism (Adelman 1993; Adler 2003; Hadfield 2012; Noffke 1997; Pine 2009; Sandretto 2007). However, in the body of educational research, studies of the moral issue of how political action research empowers educators are more limited in number (Adelman 1993). This situation is due, in part, to the lack of interaction between educational faculty and the practitioners engaged in personal and political action research outside of university-supervised programs. However, some records of successful political action research in schools can be found (Pine 2009). Jill Bradley-Levine, Joshua Smith, and Kari Carr found that 10 percent of the teachers in their study claimed to have "effected change at the district or state level" using action research (2009, 154). Partnerships between practitioners and professional researchers acting as mentors and consultants can lead to broader dissemination through the academic press, as well as improvement in the quality of the action research conducted (Corey 1953; Gordon 2006). The practitioners use their action research findings to "support decisions they made in the classroom, as well as to challenge district policies they believed had negative impacts for students" (Gordon 2009, 156), impacting the local school community in the short term and, in the long term, producing a positive societal impact.

Conclusions from the Review of Literature on Action Research

Action research holds the promise of restoring professionalism to teaching and improving student learning outcomes in the classroom and school library (Brandt 1993; Todd 2015). The lack of general acceptance of action research to effect change in schools is due, in part, to the difficulties arising from the complexity and confusion caused by conflicting vocabularies and methods used in various educational communities when describing action research; these communities include policy makers, practitioners, and academics (Adelman 1993; Corey 1953; Gordon 2009; Noffke 1997; Pine 2009; Sandretto 2007). Instruction in action research at the university level has had limited impact in education in the last seventy-five years, even in programs such as library science, where coursework in AR is frequently offered. Teachers and school librarians might be familiar with action research but lack confidence and support to continue its practice (Adelman 1993; Gordon 2006). Collaborative partnerships between school librarians and university faculty can remedy these shortcomings (Bruce, Flynn, and Stagg-Peterson 2011).

This review of the literature follows Noffke's (1997) suggestion that action research be defined by its purpose rather than its method. Her analogy to families of action research is applied in this paper to frame the implications of this study. The question guiding this study is whether school librarians' view personal action research as feasible, valuable, and empowering. These findings are presented in the Discussion section.

Method

Overview

Thirty-nine practicing school librarians in rural areas of the midwestern United States each conducted four action research studies while working on a graduate degree in Library Science and Information Services. Aggregate data from reports of the 156 studies illustrate how AR improves practice. This study also explored whether, after conducting four AR projects each, the librarians determined action research to be feasible, valuable, and empowering.

This is a mixed methods study employing different but complementary data that offered the options to either merge or compare and contrast data (Creswell and Clark 2007). Several types of data from the AR reports were tallied to produce aggregate data. A survey administered in the school year after the school librarians left the university probed their beliefs about AR. Centrality measures were employed for the survey results, which consist of responses from a nonrandom, opt-in, sampling of librarians in rural schools.

Participants

The thirty-nine 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 2015). 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 thirty-nine school librarians had not taken any formal coursework in school librarianship, they were aware that they were often underperforming in their roles and leaving their schools and communities underserved. Residents in many rural school districts are low-income; tax-supported school budgets are tight and do not contain funds for enough professional development, and educators' salaries are below average (United States Department of Education 2012). Therefore, these school librarians lacked economic resources to pay for the coursework that would adequately prepare them for the role of school librarian (Reeves 2003). The Laura Bush 21st Century Librarian Program Grant from the Institute of Museum and Library Services (IMLS) provided an $843,000 grant for the purpose of providing scholarships to these school librarians. As a result, all thirty-nine practitioners were able to obtain master's degrees in Library Science and Information Services. These school librarians reflected the age, gender, and racial characteristics of the population of rural teachers in the midwestern United States: predominantly middle-aged, female, and white.

Project Timeline

The thirty-nine librarians were divided into two graduate cohorts. Nineteen librarians were in the first cohort, and twenty were in the second. The two cohorts of practicing school librarians conducted action research projects in their own school libraries. The study period began in spring 2012 when the first cohort took an online course in which they studied evidence-based practice

(Geitgey and Tepe 2007; Todd 2003), as well as action research (Parsons and Brown 2002). In this course they worked in groups to design their first AR study. 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 the first cohort. These school librarians received their master's degrees in summer 2013.

In spring 2013 the twenty school librarians in the second cohort took their online course in action research; like the members of the first cohort, these school librarians worked in groups to design their first study. Then in fall 2013 and spring 2014 these school librarians each completed four action research projects. 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 thirty-nine of the school librarians (both cohorts) were invited to take the action research survey. The survey focused on uncovering whether or not the school librarians found AR to be feasible and valuable, and whether they gained a sense of professional efficacy as a result of conducting four independent action research projects. Nineteen of the school librarians (49 percent) responded to the survey.

Setting

The author of this report was an internal co-principal investigator on the IMLS grant and was responsible for teaching the course in action research to grant recipients, overseeing the action research component, and serving as the university partner to mentor the school librarians through their research. All teaching and mentoring activities were conducted online. The school 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.

The Blackboard Learning Management System was used by the university partner to share announcements and instructions, and to post grades. Students used Blackboard to ask questions related to the course in general, and access grades. Also students were invited to use the discussion forum that was setup for questions and answers to interact with each other and share resources. E-mail was used extensively to support projects and was the medium for providing feedback and guidance about projects, as well as written records of the communication between the university partner and the practitioner. E-mail was used for feedback for both the action plans and the final reports.

Intervention

From Theory to Practice

The grant provided a unique opportunity to observe how participating school librarians put what they learned from their coursework into practice. It also provided the opportunity for the librarians to have a university faculty member as a partner as they conducted their action research projects. Having thirty-nine practicing school librarians conducting action research provided an opportunity to examine the impacts of action research in authentic school settings to determine if AR was feasible, given time constraints in the school library, whether it was viewed as valuable by the school librarians who participated in this program, and whether they found AR to be personally empowering. This study was influenced by the need for in-service school librarians to gain the experience necessary to view themselves as competent action researchers.

The goal of requiring four independent action research projects was to move recipients beyond the stage of familiarity with action research to a place where they felt a level of confidence in their research skills. This confidence is acquired through practice (Corey 1953). The number of projects was determined by the amount of work required for a Carnegie practice credit hour: between forty-five and sixty hours per credit (U.S. Network for Educational Information 2008). In this master's program, the librarians were required to take four credit hours of coursework related to a research problem, two in the fall and two in the spring semester of their final year in the program. Instead of receiving a grade for the fall and spring coursework, those sections were graded as incomplete. Then when all four action research projects were completed at the end of the summer semester, students were given a grade for the fall and spring courses. All thirty-nine librarians completed four projects.

Project Phases

Each action research project was conducted two phases. Phase one was a four-step process used to create an action research plan following the tradition of naturalistic inquiry (Lincoln and Guba 1985). First, the school librarians identified an area in which their practice could be improved. Second, to find a promising intervention to ameliorate the issue, available educational research on the issues related to that practice was reviewed. Third, methods for collecting data that reveal the success or failure of the intervention were identified and selected. The librarians were encouraged to find a source of numeric data because numeric data makes analysis easier for novice researchers. Fourth, a study was designed to implement the intervention and collect data. At the end of this phase, the university partner reviewed the action research plans and provided feedback to ensure the planned projects were ethical and practical. The librarians waited for the university partner to approve their plans before conducting their action research. For more information on the process used, see appendix A.

For phase two the action research projects were conducted, and for each project a report was generated based on the plans from phase one and the results of the AR studies. Phase two contained four steps. First, the data were presented. Next, the results of the action research study were described. Third, the librarians identified the potential threats to the study. Fourth, they wrote a reflection on the project with implications for practice and for future action research. The reports for the action research projects were reviewed by the university partner, and the school librarians were encouraged to share results with their administrators. An example of a report can be found in appendix B.

Data Collection

Qualitative Data from Students' Reports

Each school librarian created an online portfolio containing his or her four action projects; these portfolios were used as the sources of data aggregated for this study (see appendix A). StoneSoup (2013), an xForms system developed by the university partner using the PERL programming language, was used to create the portfolios, which served multiple purposes. The librarians could edit their action research plans within StoneSoup; therefore, 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; in addition, the university partner could base feedback on the contents on the portfolios (Kuntz et al. 2013; Stuart 2012). Students were able to view each other's reports and use them as a source of ideas for projects and as models for their own reports.

Also, the reports provided data that was indexed (by the university partner) according to content and downloaded to a spreadsheet for the purpose of quantitatively analyzing 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. The webpage can be accessed via one URL that contains the librarian's username and allows readers to add comments to items in the report or through a second URL that provides anonymity for the librarian and does not allow comments.

Qualitative Data from Survey Responses

An invitation to take the survey (in this paper, referred to as the "action research survey"), was sent via e-mail to all thirty-nine graduates of the IMLS cohorts a semester after they were awarded their master's degrees. The survey was anonymous and no demographic information was collected. It was not possible to determine whether respondents completed the program in the prior semester or the prior year. This piece of demographic information might have been useful to determine if the passing of time impacted survey responses.

The survey used twelve questions to explore whether or not the school librarians found action research to be feasible and valuable, and if they gained a sense of professional efficacy as a result of conducting four action research projects. An answer was required for all survey questions except for one open-ended question. The survey was administered using Google Forms. The results are presented in the Findings section and explicated in the Discussion.

Data Analysis

Qualitative Data from Students' Reports

Qualitative data from the report narratives were analyzed using the grounded theory method for the purpose of discovering structural concepts from the data itself (Strauss and Corbin 1998). Using a constant comparative method, data were simultaneously analyzed and coded (Taylor and Bogdan 1997). Then, using this open coding, another analysis focused on "leads, ideas, and issues in the data themselves" (Charmaz 1983, 113). The results of the qualitative analysis provided a list of attributes of the action research studies; this list of attributes could then be analyzed quantitatively and presented in an aggregate fashion in the Findings section. Also, results of this analysis lead to the creation of the questions used in the survey and the research question guiding this report on the study.

Quantitative Data from Portfolio Contents and Survey Responses

Quantitative data about the projects were extracted from the portfolio system and recorded 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. However, measures of centrality were used to analyze the survey data.

Consent

No consent was required to present the aggregate data. However, consent to share was obtained from the school librarians and their administrators for specific examples of action research projects presented for illustration purposes in the Results section and in appendix B. Consent was also obtained from all survey respondents so that those results could to be shared in this report.

Analysis Limitations

Because the survey 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 the school librarians' action research apply to improving local conditions.

Findings

Overview

Three types of data were collected for this study; the first presented here are examples of the school librarians' projects that serve as illustrations of the type of inquiries they conducted and enhance the discussion in the Implications section. Second, aggregate data were used to determine if the librarians' action research had a positive outcome on their practice and which areas of practice were addressed through the inquiries. The third source of data was a survey of the librarians. Results from the survey address the research question guiding this study concerning whether the librarians found action research to be feasible, valuable, and empowering.

Five Examples taken from the 156 Action Research Projects

Out of the twenty-eight action research projects made available through the consent procedure used with the first cohort of librarians, five examples were chosen as representative. These representative examples are sufficient for the purposes of providing information about the scope of the projects chosen by the school librarians. Working with a university partner as a mentor for the action research projects, the librarians were free to select an inquiry they felt would be profitable for their schools. The examples provide the minimum of data about the projects: the topic, the issue to be solved, the intervention tested, and the results. These project descriptions were condensed to fit in a brief table format (see table 1). An example of a complete report on a project is provided in appendix B.

Three of the projects were aimed at increasing book circulation. One of the projects was directed at increasing teachers' use of the library's professional development collection. A fifth was directed at improving student behavior. Through the use of a before and after survey of students' opinions of the school library, the librarians also had an opportunity to determine the overall improvement in students' perceptions of library services over the school year. The pre-intervention survey was administrated to students at the beginning of the school year. The post-intervention survey was administered near the end of the school year. The survey of students consisted of twelve questions taken from the Ohio Educational Library Media Association (OELMA) *Student Learning through Ohio School Libraries Survey,* created by Ross Todd and Carol Kuhlthau (as cited in Whelan 2004). See appendix C for the adapted survey questions. The librarians were invited to further adapt the questions for their own student populations. Thirty-six out of the thirty-nine school librarians in this study elected to use the survey as one of their research projects. The objective of the survey, to see if students perceived an improvement in library services over the year, might be seen as a frame for the shorter-term AR projects. The shorter projects might then be construed as cycles of personal action research designed to address the larger issue of improving services overall.

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

		Examples of Action Research Projects		
#	Topic of Study	Issue	Intervention	Results
1	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.
2	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.
3	Increase elementary library book circulation	Kindergarten and 1st-grade book choices limited	Move to open-access book check out for all grade levels	Books checked out increased by 33%
4	Teacher In-service	Teachers not using library resources	15-minute in-service on using the library catalog for 15 pre-K to 6th-grade teachers	11 teachers = 73% increased checkouts 3 teachers = no change 1 teacher = decline in use
5	Reduce library disruptions	Disruptive 2nd-graders in the library	Four learning centers added to library	80% reduction in behavioral redirects

Aggregate Data—All Projects

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 percent of the studies (n=125), results were positive. The attempt to improve practice worked as determined by the librarian based on the data. This conclusion was verified by the university partner. In 20 percent (n=31) the outcome of the project showed no measurable improvement or negative results. In these cases the librarians addressed this circumstance in the reflection section of their reports and suggested a plan for improving the approach or methods used in 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 as the other action research projects (81 percent of the 63 projects had positive impact (n=51 or 33 percent of the total of 156 projects) and 19 percent negative (n=12 or 7 percent of total of the 156 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 both students and teachers. The most common goal of the action research projects, 49 percent (n=76), was to make an improvement that impacted the whole school. However, 45 percent of the projects (n=70) involved classes or smaller groups of students. Other projects, 6 percent (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). To gather evidence of change in the use of library services, in 23 percent of the projects (n=36), the librarians elected to adapt the OELMA survey for use by their students. 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.

Table 2. Aggregate results of the action research projects.

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 (Scope)		
Whole School	49%	76
Group or Class	45%	70
Individual	6%	10
Focus of Projects		
Technology	31%	48
Overall Library Improvement (adapted from the OELMA survey)	23%	36
Targeted Library Services	32%	50
Professional Development	5%	8
Other	9%	14

Survey Results

Introduction

Results from the action research survey were compiled between December 2014 and January 2015. Of a total population of thirty-nine school librarians, nineteen completed the survey, for a response rate of 49 percent. The results for each question are presented below.
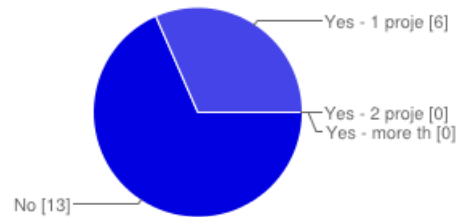
Additional Action Research Completed

For question number 1 (see table 3), "Have you conducted any action research projects since completing your program?" 68% (n=13) of the librarians have not, while 32% (n=6) have.

Table 3. Action research projects completed after the completion of master's program.

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%

Additional Action Research Planned

For question number 2 (see table 4), "Do you plan to conduct an action research project this school year?" 32% (n=6) have no current plans, 58 percent (n=11) have plans for one project, and 11 percent (n=2) have plans for more than one project.

Table 4. Plans for conducting more action research projects.

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 > 1 AR project	2	11%
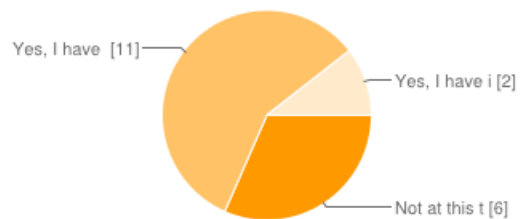
Discussion of Action Research

For question number 3 (see table 5), "Have you discussed action research with other educators in your building?" 11 percent (n=2) have not had a discussion, 21 percent (n=4) have not had a discussion but plan to, 63 percent (n=12) have had discussions about action research, and 5 percent (n=1) have often discussed action research.

Table 5. Discussion about action research at school.

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%
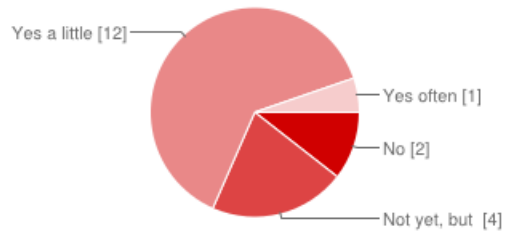
Competence in Action Research

For question number 4 (see table 6), "Do you feel competent to conduct action research?" all respondents (n=19) answered "Yes," and 21 percent (n=4) answered that they feel like an action researcher.

Table 6. Competence as an action researcher.

4. Do you feel competent to conduct action research?

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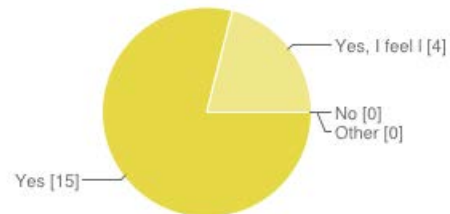
Empowerment from Action Research

For question number 5 (see table 7), "Did your action research make you feel more empowered in your school?" 89 percent (n=17) answered "Yes," and 11 percent (n=2) answered "No."

Table 7. Empowerment due to action research.

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

| Response	N	%
Yes	17	89%
No	2	11%
Other	0	0%
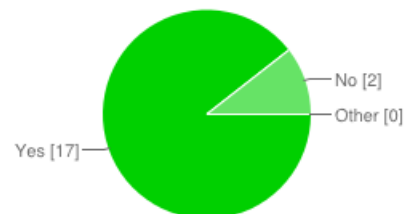
Confidence in Sharing Research Results

For question number 6 (see table 8), "Did having evidence of your success with action research give you confidence to share your findings?" All (n=19) answered, "Yes."

Table 8. Successful action research projects increased confidence to share results.

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%
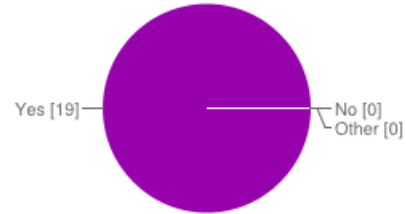
Increased Credibility from Action Research

For question number 7 (see table 9), "Do you feel you gained credibility as a result of conducting action research?" 79 percent (n=15) answered "Yes," and 21 percent (n=4) answered "No."

Table 9. Action research increased credibility.

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%
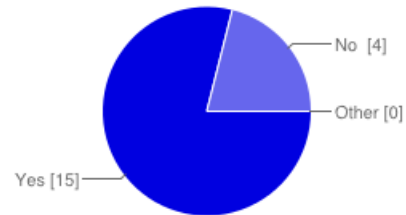
Increased Collaboration from Action Research

For question number 8 (see table 10), "Did conducting action research lead to more collaboration with other educators in your school?" 79 percent (n=15) answered "Yes," and 16 percent (n=3) answered "No," and 5 percent (n=1) answered "Other," explaining that her AR project led others to support and promote summer reading.

Table 10. Action research increased collaboration.

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%
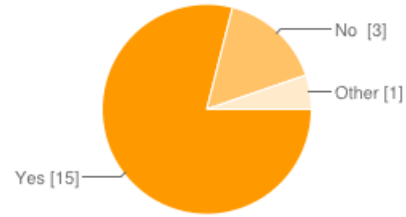
Prestige from Action Research

For question number 9 (see table 11), "Do you feel you gained prestige in the eyes of your administrator because you conducted action research?" 63 percent (n=12) answered "Yes," and 21 percent (n=4) answered "No," and 16 percent (n=3) answered "Other." One received a grant due to the action research; one thought that prestige remained the same and that it was high; a third was not sure.

Table 11. Prestige was gained through action research.

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%
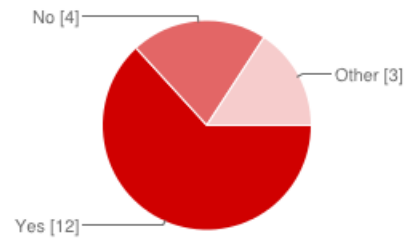
Action Research and Librarian Evaluation

For question number 10 (see table 12), "Would you like the results of your action research to influence how you are evaluated as a school librarian?" 42 percent (n=8) answered "Yes," 47 percent (n=9) answered "No," and 11 percent (n=2) answered "Other," with one replying she is evaluated as a teacher and the other replying that it depended on the librarian's role in the district, whether the librarian had aides, and whether the library schedule was fixed or flexible.

Table 12. Would like to see results of action research included in evaluations.

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%
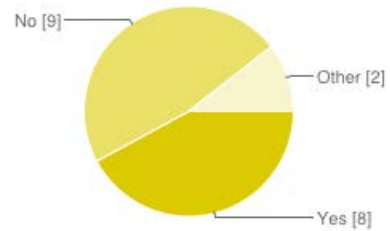
Action Research by Teachers

For question number 11 (see table 13), "Do you think other teachers should conduct action research?" 89 percent (n=17) answered "Yes," 5 percent (n=1) answered "No," and 5 percent (n=1) answered "Other," stating, "It depends on the librarian's situation."

Table 13. Belief that other teachers should conduct action research.

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

Response	N	%
Yes	17	89%
No	1	5%
Other	1	5%
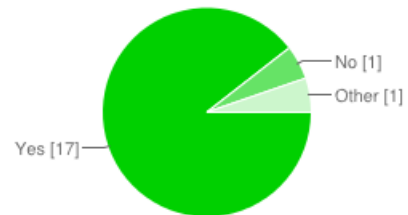
Action Research and Teacher Evaluation

For question number 12 (see table 14), "What do you think of the role of action research in teacher evaluation?" respondents could select all the answers they thought appropriate.

- 16 percent (n=3) had no opinion for this question,
- none (n=0) of the respondents thought action research made too much extra work for teachers and librarians,
- 32 percent (n=6) thought action research *could* be used in teacher and/or librarian evaluations,
- 5 percent (n=1) thought it *should* be included in evaluations,
- 74 percent (n=14) thought action research promoted continuous quality improvement, and
- 37 percent (n=7) believe that if more educators conducted action research it could change the climate of the school.
- 37 percent (n=7) believe that action research empowers teachers
- 11 percent (n=2) chose open ended responses:

o   It could be included as an option for teachers to use as an area that they would like to be evaluated in.
o   Teachers need training in how to conduct Action Research.

Table 14. Beliefs about 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%

Opinions about the Role of Action Research in Schools

Following question 12 was an open-ended item, "Please share your opinion." Four respondents offered their thoughts:

"I think that a lot of teachers are unaware that new NEE [Network for Educator Effectiveness] evaluations (including those on their PDPs [professional development plans]) will require they perform some sort of action research to collect the data necessary to prove they are meeting professional goals" (Respondent #3).

"This is a situation in which something has to give; teachers really don't have time for this (though I see its value). Conducting action research is a good practice, but tying results to teacher evaluation makes little sense to me, as there are too many possibilities for skewing results. It may also encourage teachers to ONLY research topics/questions about which they'll show growth, not focusing on true needs for improvement, which are sometimes more challenging to make better" (Respondent # 4).

"Action research could be encouraged but not required. It is extra work that can be overwhelming depending on time [constraints]" (Respondent # 9).

"I believe Action Research should be included in teacher evaluations only if the emphasis is on both qualitative and quantitative. Too often districts get hung up on the numbers, and numbers do not represent the whole picture in education and our students' lives" (Respondent # 10).

Discussion

Overview

This study supports claims that action research serves as a bridge between educational research and improvement in practice for thirty-nine school librarians. The librarians who were part of this study completed four action research projects over one school year, indicating that multiple cycles of action research are feasible for school librarians. The librarians who responded to the survey questions indicated that they found action research to be feasible and valuable and that it did lead to increased collaboration and empowerment in their schools.

Discussion of the Aggregate Data

Aggregate results from the action research projects indicate that the partnerships between the school librarians and the university mentor lead to the completion of all 156 AR projects. A key role of the mentor was to provide advice on data-collection methods and interpretation. Mentoring was needed not only in planning the action research projects but also in evaluating the results. Some school librarians set high criteria for success and did not view more-modest successes as positive. For example, the 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 three teachers meant her action research project was a success.

Eighty percent of the action research projects had positive outcomes. This translated to improvement in library services in all thirty-nine schools. This improvement rate is even more noteworthy when considered in context: almost half of those projects involved activities that impacted the entire school. Collaboration with teachers occurred 40 percent of the time, and 80 percent of the results of those action research projects were positive. Improving library services was the focus of many projects (55 percent), and almost a third of the projects (31 percent) involved promoting the use of technology to students or teachers.

Discussion of Survey Results

Introduction

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 percent of librarians who did not choose to complete the survey might have held different opinions, those who did respond indicate that the experience of conducting action research was empowering.

Feasibility

A goal of having the school librarians each conduct four action research projects was to provide them with enough experience so that they felt comfortable in the role of action researcher. All (100 percent) of the school librarians felt they were competent action researchers, and they all felt (100 percent) confident about sharing the results of their projects.

Value

Almost two-thirds of the school librarians (68 percent) are talking about action research with other educators in their schools, and 89 percent feel that other teachers should conduct action research. These responses suggest that the librarians have taken leadership roles in this area.

Seventy-nine percent felt that conducting action research promoted more collaboration with these peers. Increasing collaboration is a goal of many school librarians, and the survey indicates that action research might be an effective method for achieving this goal.

Sixty-nine percent have conducted action research after leaving the master's program or have plans for more projects. Since a finite amount of time is available, this response indicates that school librarians see sufficient value in action research to improve practice that they plan to devote some of their precious time and energy toward it. In addition, 74 percent of the librarians indicated their belief that action research promotes continuous quality improvement; this response is another indicator of the value they see in conducting AR.

Empowerment

When asked directly if they felt action research was empowering, 89 percent of the respondents 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 administrators are their supervisors, the building principals.) A related point of note is that only 37 percent of the school librarians responding saw that action research could change the culture of a school; research in this area suggests it can (Gordon 2006), but this change occurs over the long term, and that reality might explain this relatively low positive response on this topic.

The revelation that came from question 12, concerning whether action research could play a role in teacher and school librarian evaluation was interesting. The librarians were hesitant when it came using action research as a way to evaluate their performance. Less than half of the librarians desired this. Reasons given include a concern that being evaluated would cause practitioners to choose less-daring projects because of the fear of failure. Concern was also expressed that administrators might then stipulate whether quantitative or qualitative methods were used. Also, time is a factor and would need to be available if teachers and school librarians are to conduct action research that might be used in their evaluations. Though there is a potential for using action research as part of performance evaluation, these concerns are valid and indicate practitioner autonomy is needed for action research and that projects need to be conducted without consequences for failure.

Implications

Introduction

Implications of this study align with Noffke's framing of action research by three families: professional action research, personal action research, and political action research (1997). Each family is distinguished by its purpose. The purpose of professional action research is publication to share knowledge. The purpose of personal action research is to improve practice. The purpose of political action research is to bring about social progress. It bears repeating that family

characteristics are not exclusive to a particular lineage, but can be shared across all three lineages, though they tend to be more dominant in some family lines than others.

The results from this study have implications in each of the family lineages. In particular, Noffke's framing of action research by families provides a vocabulary that might improve the discussion of action research overall. Distinguishing the families by their purpose might be particularly useful for mentoring and instructing practitioners as they conduct personal action research (1997). Because this mentoring and instruction is often done at the post-secondary level, professional action research is also impacted, as discussed in the next section. Next is elaboration on implications of this research for personal action research. The result of success in these two family lines implies impact on the third, political action research. That discussion concludes this paper.

Professional Action Research

Professional action research is now accepted as being methodologically rigorous enough to be recognized as a form of naturalistic inquiry that builds educational knowledge. While the school librarians in this study desired to use action research solely to improve their practice, the purpose of their university partner is to glean knowledge from this practitioner research to share in academia and among policy decision-makers. This study is not unique in having dual purposes (see Gordon 2006), but in professional action research the preponderance of studies reported in academic journals use action research as a method of inquiry for the purpose of publication. This use of action research is not in itself a problem, but it can skew the academic conversation about action research to the detriment of the personal and political lineages, since reports from these lineages are not as likely to appear in the academic press.

The use of action research in graduate theses and dissertations, which are intended for publication, rightly require that graduate students be taught to adhere to rigorous professional research methods. However, for the purposes of personal action research, the standards used by professional researchers might not be required. "No one has a corner on …better methods. They are learned from practice. To refrain from trying because one lacks the skill or has perfectionist aspirations precludes improvement, and improvement is what counts" (Corey 1953, 83). This perspective has implications for those who teach action research to practitioners at the post-secondary level. Understanding of action research in academia has, to some extent, been confounded by the success of professional action research and by the lack of clarity about what differentiates the families of action research.

While each family line might adhere to methods of naturalistic inquiry in the planning stages, these plans are not inviolate when conducting personal or political action research; instead, these plans can be adjusted to the requirements of the context. For example, the school librarian who wished to reduce disruptions in her library during checkout started with a plan that involved creating activity centers (see table 1, project 5). Based on her tally of disruptions, this solution worked; she experienced an 80 percent reduction in disruptions. So there was no need for a second cycle to her action research; instead, she moved on to a problem she deemed to be in more urgent need of her attention. Professional action research might require: 1) using more sources of data than her tally sheet, 2) repeating the inquiry to verify the results, and 3) getting parental consent and assent from the children before the intervention. However, the methods she used were suitable for improving practice, which is the purpose of personal action research. The knowledge the librarian gleaned from this study is generalizable in the local community and to future library visits by second-graders. In addition, her report of the research serves as record of

her evidence-based practice. This evidence increases cumulatively if she continues to use action research as a scientific inquiry into her practice.

Personal Action Research

Like most educators, school librarians are typically more interested in improving their practice than in reforming the educational system (Adler 2003; Gordon 2006, 2009). For this reason, personal action research aligns with their priorities. This study joins a long history of research that indicates that action research is successful as a means to improve practice (Adelman 1993; Corey 1953; Gordon 2006, 2009; Kuntz et al. 2013; Noffke 1997; Parsons and Brown 2002; Pine 2009; Postholm 2009; Sandretto 2007; Wideman 2011). Gerald J. Pine has provided a table with a list of twenty-seven benefits, but his list is far from exhaustive (see Gordon 2006, 2009). Because of the extent of findings related to the benefits of personal action research, that discussion is beyond the scope of this paper.

What is addressed with this study are the questions of how feasible, valuable, and empowering the practitioners themselves find action research when they have an opportunity to develop skills by conducting multiple studies under the mentorship of a university partner. The question of how many personal action research studies are needed for practitioners to have confidence in their skills has been partially answered by this study. All nineteen survey respondents, after completing four studies, felt confident as action researchers. Future research in this area might yield a more complete understanding of this issue. Also it might be worthwhile to explore what skill level is sufficient for the scaffolding provided by the mentorship of the university partner to be removed.

"Research on educational change indicates that change is more likely to occur when participants feel ownership of a problem and feel connected to the solution" (Gordon 2009, 71). Project 1 in table 1 is an example of how ownership of the problem and solution are produced by personal action research. The school librarian learned through the research literature that displaying themed books increased their circulation but had not applied that understanding personally or scientifically to her own practice before. Now that she knows from her data how well the book displays worked, she is more likely to generalize this personal knowledge in new situations.

An additional implication from this study was revealed by survey responses: AR led to more collaboration between school librarians and teachers, and to librarians discussing action research with classroom teachers. These findings have implications for the broader acceptance of action research among practitioners, as personal interactions are the primary way teachers share knowledge (Corey 1953; Gordon 2006, 2009; Pine 2009).

Political Action Research

The following discussion is limited to implications of the personal action research done by the thirty-nine librarians to a broader political social sphere. However, the purpose for promoting action research is always to "advance political agendas …both overt and embedded in the constructions of the professional and personal" (Noffke 1997, 333). This purpose is a positive force when the political agenda is to see teachers and school librarians transformed into change agents who strive to make schools better (Sandretto 2007). The impetus of the culture of accountability becomes more democratic, arising from practitioners themselves, not from top-down mandates of policy makers. In this way teachers and school librarians gain power from their professionalism (Todd 2015). This empowerment is reflected in the affirmative response of

almost 90 percent of the librarians who participated in this survey when answering the question: "Did your action research make you feel more empowered in your school?"

The responses of the librarians were more problematic when they were asked if they would like to see action research used as a means to evaluate their performance, and to elaborate on their views (items 12 and 14 in the survey). Less than half the respondents thought this application of action research to performance evaluation would be desirable, though this response was not due to AR being infeasible. Rather, in open-item responses, the librarians' statements demonstrated that they were wary of top-down pressures, explicit and implicit, that might limit or expand their inquiries. These concerns are valid and reflect the changes needed to promote a more democratic approach to teacher evaluation.

Carol Gordon (2006) reported that the culture of a school changes when teachers and librarians engage in action research if the benefits are made visible. Three-quarters of the survey respondents are talking to teachers about action research—or plan to—and they are collaborating more because of their AR projects. Respondents also believe that other educators should conduct action research. These are beliefs and activities of change agents.

With action research, school librarians—and other educators—see themselves as a source of reform rather than the object in need of improvement. This perspective can produce a lifelong habit of inquiry as the school becomes the center of this activity (Pine 2009). Political action research is viewed as a long-term activity in which educators take a critical stance toward their practice, rather than AR being a solution to a particular problem (Sandretto 2007). This critical approach to their own practice becomes an attitude, state of mind, and identity. This perspective is reflected by the response of the four librarians in this study who declared, "I am an action researcher."

Action research offers a key role for school librarians and can impact the profession of school librarianship in four ways. One is that librarians understand how knowledge is created through a democratic, "constructivist, inquiry-based framework" (Gordon 2009, 68). Also, because the school librarian interacts with all the students and teachers, he or she is more likely to understand school-wide issues. Third, the librarian can not only teach but can also model the research process, as part of routine practice and as part of the library curriculum. Fourth, he or she also has access to educational research and can help classroom teachers find the evidence they need to make well-informed decisions about practice (Gordon 2009). An example of this focus is found in table 1, project 4, for which the librarian chose as a personal action research project to improve circulation of the professional development collection. She accomplished this goal by providing teachers with instruction on how to access these resources though the online catalog. After this single training session, eleven out of fifteen teachers increased their use of this part of the collection, seeking evidence to improve their practice.

Conclusions for the Implications

Based on the implications of this research, program-level changes were made in the graduate program that led to this report. One is that master's students who are practicing teachers or librarians now have the option to conduct one action research project and plan a second project instead of writing a research paper for the capstone of their graduate program. The caveat here is that, while research papers are published online, the action research reports will not be, in order to remain within the guidelines of the institutional review board.

Graduate students now also have the option of conducting additional action research in lieu of an elective. Another change is that an additional credit hour was added to the action research course that all master's students take; this extra credit hour allows for an additional assignment. For this assignment a plan for an action research project is created by a group that consists of pre-service and in-service librarians. The use of a group for this project ensures that the plan is for research related to an authentic need.

Based on the implications of this study, four questions might warrant more research. What impact does instruction in action research during teacher and school librarian preparation programs have on future practice? How does action research contribute to schoolwide improvement? What results arise when school librarians are empowered by their personal action research? Finally, is it possible to develop Noffke's framework for families of action research into action research theory that explores its dimensions and usefulness beyond it application in this study? Research literature on all of these topics exists and contributed much to this paper, but more research is needed to demonstrate, through professional educational research, the value of practitioner research in schools.

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Appendix A: Oversight of Librarians' Action Research

Students began their graduate program with a two-credit-hour action research course. The course had four units of instruction. The first was on how to understand the Normal Curve, Statistical Significance, and Effect Sizes. The second unit required students to practice three research techniques and report the results: 1) conduct an interview, 2) conduct an observation, and 3) conduct a comparison study. For the latter students experimented on themselves as they attempted to memorize a dozen threats to research validity. They divided the list of threats in two, chose two memorizing techniques, and compared the results in a brief report. The indirect results of the activity were that the librarians learned to identify research threats. The third unit involved conducting a review of research literature. The fourth required the librarians work in a group to create an action research plan. They had the option to implement the plan in the following fall semester.

Students then took a two-credit-hour Research Problem course the following fall. They received an grade of 'incomplete' and took another two hours in spring, again, receiving an 'incomplete' grade. The final grade was awarded in the summer semester after all four action research reports were submitted and approved. The assignments for each of the four action research projects were the same. For the planning stages, the following were required:

- The title of the project in the form of a question
- A 100-word description of the setting and statement of the research hypothesis
- A 75-word statement of the problem
- A bibliography of the research they consulted to find a potential solution to the problem, consisting of at least five sources
- A 150-word description of the planned intervention
- A description of the data-collection plan

For the report after the completion of the project, the following items were added to the plan:

- A 100-word description of how the study was conducted
- A 100-word reflection
- A list or description of the data used to formulate the results

Word limits were adhered to, but not religiously. The librarians understood that the reports were to be shared with their administrators and that the administrators would not read the reports if they were too long.

The use of an online portfolio system facilitated communication between the university researcher and the librarians. The librarians used this system to write their plans and then edit and refine them, add the results for the final reports, and edit the reports. The portfolio system could present each plan as a form to be filled in or as a webpage. Figure 1 shows the menu display of the StoneSoup system as it was used by the university partner to see a complete group of action research projects for one round of investigations. Figure 2 shows the screen display for all projects for a single librarian. Figure 3 shows a partial screen display of a report webpage. See appendix B for an example of a librarian's action research report.

Feedback to the school librarians was provided to students after they submitted their research plans and again after the completion of the research reports. Since the goal of this instruction was

a level of mastery, plans and reports were submitted and resubmitted until they met assignment standards. Discussions resulted in over 1400 email exchanges over two years.
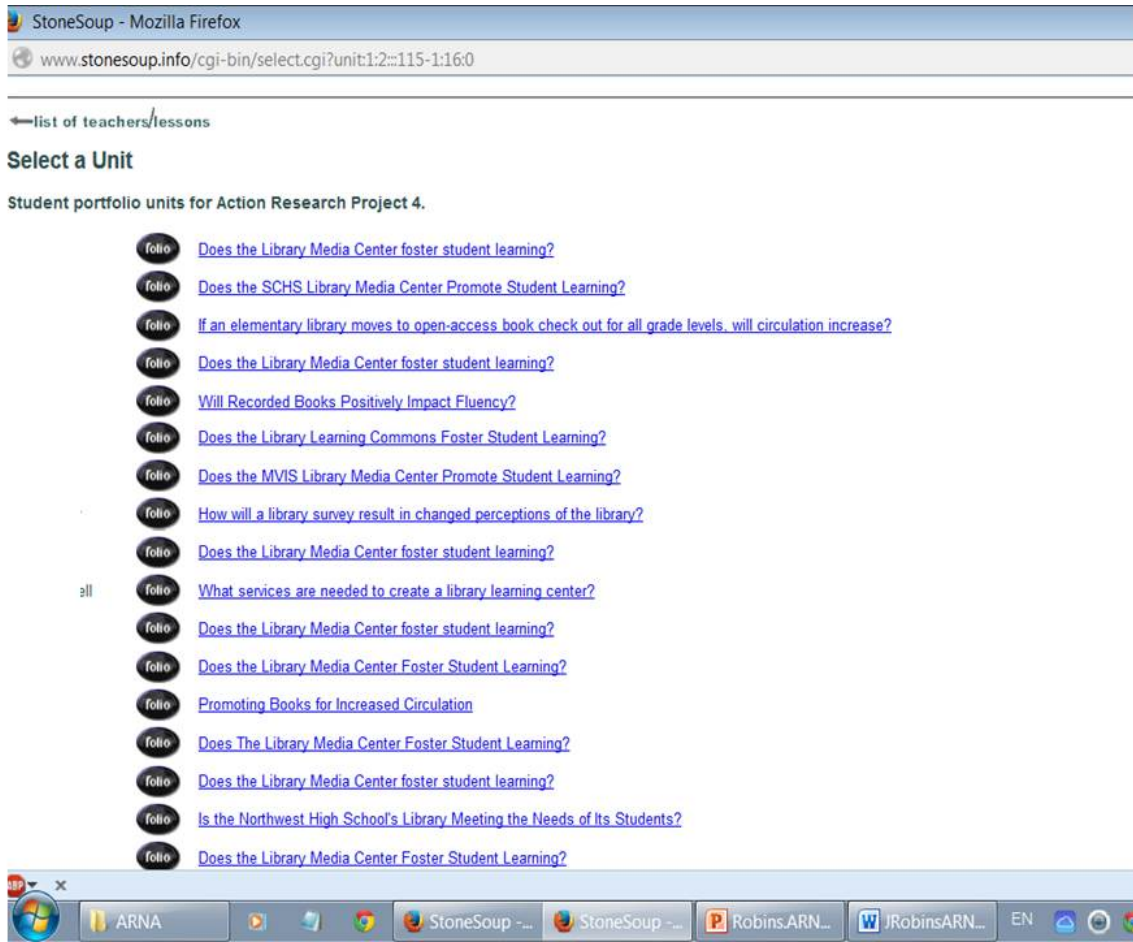

Figure 1. The list of all action research reports for the fourth project for one cohort.
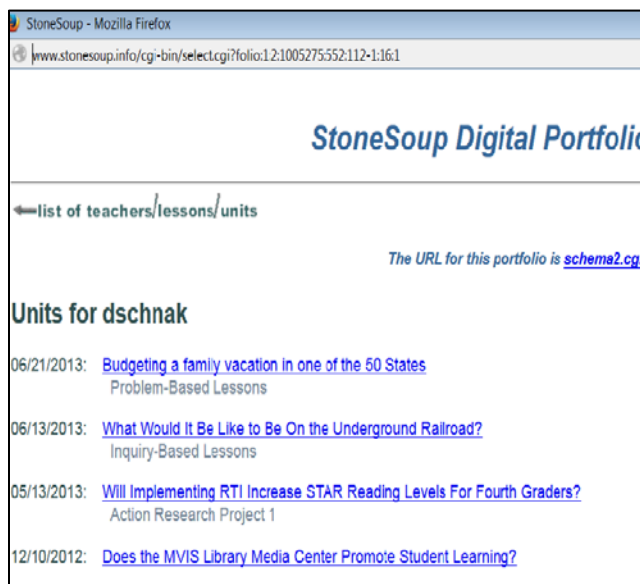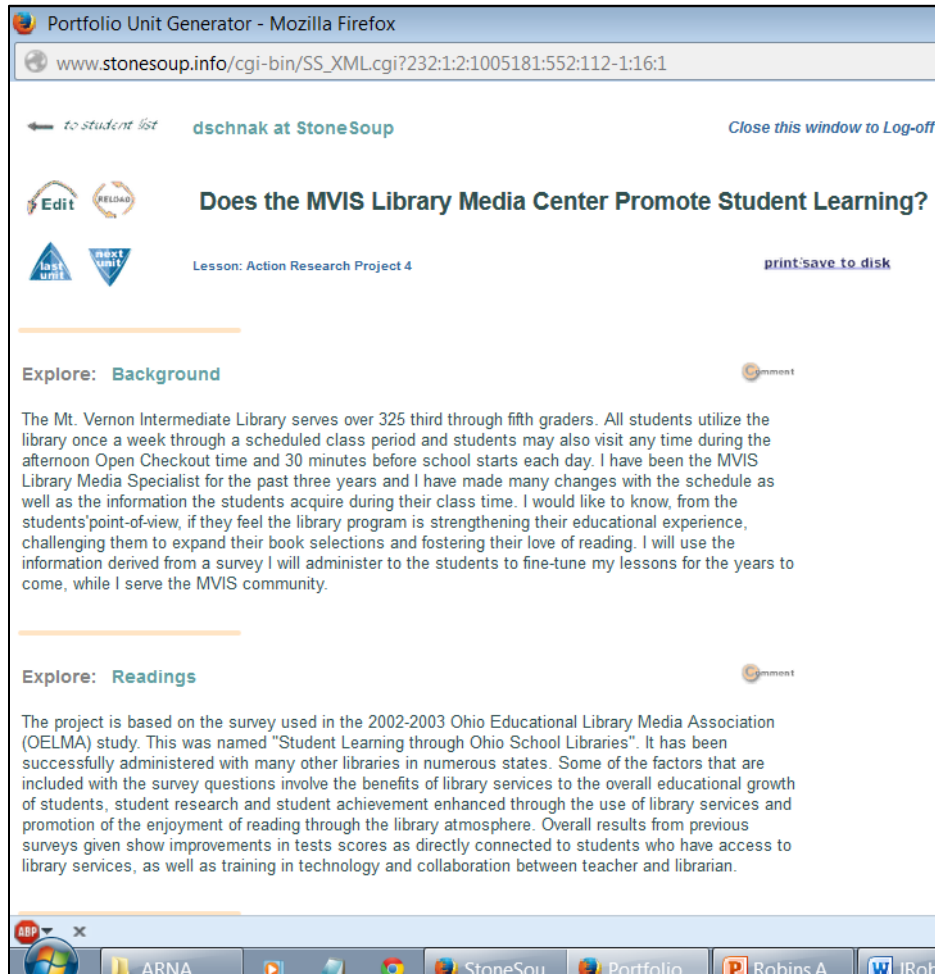

Figure 2. Screen display for all projects for a single librarian.

Figure 3. Display of a completed action research report.

Appendix B: Example of an Action Research Report

Will video directions help 3rd-grade students learn the process of locating books on shelves work better than lecture directions?

Setting and Hypothesis

Students who are beginning third-grade at MVIS are moving up from the elementary level library to the intermediate library media center. These students have been exposed to many different library principles but as yet, have not been instructed on learning the process of locating a book using the Dewey Decimal procedure from the computer to the shelves. This process is a daunting task for most and requires a number of weeks' practice before most feel successful at doing it without teacher assistance. My hypothesis is that the students who watch the pre-recorded peer video will have fewer questions and more success in independently locating the book they want after viewing the video than those who listen to my lecture explanation of how to find a book.

Purpose

The main research I have done with this is the actual experience I have had for a number of years as a library assistant and a library media specialist. I have read materials on differentiated instruction, as well as material using technology in the classroom. I think this will be an interesting study to see if explaining the process of how to find a book will be more effective using a multi-media tool rather than teacher lecture.

Literature Review

The resources I will be utilizing are as follows:

Hahn, Jim, and Lizz Zitron. "How First-Year Students Navigate The Stacks: Implications For Improving Wayfinding." *Reference and User Services Quarterly 51*.1 (2011) Web. 24 July 2012.

Mackiewicz, Sarah M., Charles L. Wood, Nancy L. Cooke, and Valerie L. Mazzotti. "Effects of Peer Tutoring with Audio Prompting on Vocabulary Acquisition for Struggling Readers." *Remedial and Special Education 32*.4 (2011): 345-54. *ERIC-Educational Resource Information Center*. 2011. Web. 19 June 2012.

Palmer, Debora. "Teaching With Technology: A Multi-Case Study of Teachers' Perspectives on the Use of Technology-Based Instruction." *ProQuest* (2010): n. pag. 2010. Web. 19 June 2012.

Ross, Alanna, and Christine Furno. "Active Learning in the Library Instruction Environment: An Exploratory Study." *Libraries and the Academy 11*.4 (2011): 953-70. Oct. 2011. Web. 19 June 2012.

Stewart, Susan C., William H. Evans, Dan J. Kaczynski. "Setting the Stage for Success: Accessing the Instructional Environment." *Preventing School Failure 41*.2 (1997) *ProQuest Central*. Web. 19 June 2012.

Thomas, Cathy N. "A Comparison of Three Instructional Methods-Teacher-Directed
        Lecture- and Text-Based Instruction, Analog Video Instruction, and Multimedia
        Anchored Instruction-on the Knowledge, Beliefs, and Skills of Preservice
        Teachers." *ProQuest* (2008): n. pg. 2009. Web. 19 June 2012.

Intervention Plan

I will teach 2 third-grade classes (approx. 50 students total) the steps in finding a book using the computer program Destiny and how to locate it on the shelves. I will have 2 separate third-grade classes (approx. 50 students) watch a video I previously taped of a fifth-grade student explaining and modeling the same procedure for finding a book. I will record the number of students who ask for help after listening to my explanation and those that ask for help after viewing the "how-to" video to see if there is any variance of numbers. I will repeat this procedure two separate class times, one week apart.

Data Plan

The data will compare how many students asked for additional help when they begin to search for a book immediately after hearing my explanation in the lecture and after viewing the "how to" video. I will go through the entire process for each of the 4 classes two times, which will involve a two-week period. I will record my data on a bar graph to visualize the difference in the results of the two types of instruction.

Intervention

I presented Class A and Class B, both third-grade classes composed of approximately 22 students each, a DVD explaining in great detail the procedures of logging into a computer, finding the library search icon on the desktop, finding the library link on Destiny, typing in the keyword and writing down the call number and name of the book. The DVD showed a student who was going through each of those steps. They then viewed the student looking at the spine labels and locating the book on the shelf. Classes C and D did not watch the DVD. Instead, I as the teacher verbally explained how to follow all the steps in looking for a book. I kept track (with tally marks on a note card) of how many students asked for further instruction once they were seated at the computers or at the shelves looking for a title.

Reflection

I had supposed that the DVD would keep their attention more than my lecturing, but I was surprised at the number of kids who asked questions over the material they had just viewed on the instructional DVD. The children asked the same types of questions in both groups, DVD instruction and lecture, but the number of students was slightly higher in the DVD instruction group over the ones whom I presented the material to in lecture form. I had assumed that there would be more connection and less questions and confusion for the third-graders watching a DVD of a peer showing step-by-step the procedures for finding a book versus students who sat through a lecture from an instructor as myself, but the number of questions from the students indicated that the lecture was more effective.

Data

The results were as follows:
Class A (DVD instruction)-12 questions

Class B (DVD instruction)-10 questions
Class C (Lecture instruction)-7 questions
Class D (Lecture instruction)-9 questions
DVD Instruction-22 total questions
Lecture Instruction-16 total questions

Appendix C: Student Survey Questions

Adopted excerpt from the 2002 Ohio Educational Library Media Association (OELMA) *Student Learning through Ohio School Libraries Survey* created by Ross Todd and Carol Kuhlthau. Thirty-eight out of the thirty-nine school librarians in this study elected to adapt the excerpt below taken from the OELMA survey.

Check the box on the right that best describes how the school library has helped you to…	I don't use the library	It helps a little	It helps some	It helps a lot
1. -know the different steps in finding and using information.				
2. -work out the questions for the topics I am working on.				
3. -find good sources of information for my topics (such as books, magazines, websites, videos).				
4. -find different opinions about my topics.				
5. -work out the most important things in the information I find.				
6. -get better at taking notes for my research.				
7. -be more interested in my topics.				
8. -figure out if my own ideas are good or bad.				
9. -be more prepared for class discussions.				
10.-enjoy reading more.				
11.-be a better writer.				
12. -get better grades on my school work.				

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