
**Developing an Inquiry Stance Through PDS Action Research:
Does it Maintain After Graduation?**

Stephanie Dodman
George Mason University

Lois Groth
George Mason University

Sophia Ra
George Mason University

Anne Baker
Fairfax County Public Schools

Samira Ramezan
Fairfax County Public Schools

Abstract: Action research is a common component of teacher education programs. Because of its focus on intentional, reflective, and systematic investigation into one's own practice, colleges and universities have commonly made action research a capstone endeavor of their programs. Engagement in deliberate investigations of practice is a hallmark of Professional Development Schools. But surprisingly there is little research investigating the influence of action research after graduation, particularly on graduates' inquiry stances. In this study, we investigated how candidates perceived the influence of action research in their teaching prior to and one year after graduation. The study occurred in our first year of implementing action research with our candidates. Our findings indicated that action research affected how candidates viewed their teaching as well as enhanced their readiness for data. One year later, they were, in fact, enacting an inquiry stance in their teaching. In this article, researchers share further questions raised by the data and current programmatic changes.

KEYWORDS: action research, inquiry, professional development schools, PDS

NAPDS ESSENTIALS ADDRESSED:

4. A shared commitment to innovative and reflective practice by all participants;
5. Engagement in and public sharing of the results of deliberate investigations of practice by respective participants

Introduction

Action research is a common component of teacher education programs. Because of its focus on intentional, reflective, and systematic investigation into one's own practice, colleges and universities have commonly made action research a capstone endeavor of their programs (Lattimer,

2012). In 2010, the National Council for the Accreditation of Teacher Education (NCATE) Blue Ribbon Panel standards cited action research, and particularly the development of an inquiry stance, as integral to helping candidates identify and address the needs of their students. Additionally, the National Association for Professional Development Schools (NAPDS) named “engagement in and public sharing of the results of deliberate investigations of practice” as one of the nine essentials of being a professional development school (2008, p. 6). Analysis regarding the impact of action research on future teachers is positive in relation to candidate development of skills such as reflection, use of data, risk-taking, and linking of theory to practice (Levin & Rock, 2003; Price, 2001; Ulvik & Riese, 2016)

But what happens after student teachers graduate? Does the impact of inquiry follow them into their first years? Much of the current research focuses on the outcomes of action research on preservice teachers prior to graduation. However, the impact of first year socialization on new teachers is well documented (Farrell, 2003). Contextual factors within the first year of teaching work to enhance or dampen what was learned during preservice teacher preparation. Thus, it cannot be assumed that educators will continue with an inquiry based approach, even one that derives from a framework as supportive and partnership-oriented as a Professional Development School (PDS) program. Considering the circumstance, we examined our graduates immediately after conducting action research during their full-time student teaching internship and one year later after they began teaching. We asked: How do candidates view the role of action research in their teaching during their internship and first year of teaching? To what degree do graduates maintain and express an inquiry stance during their first year of teaching?

Theoretical Framework

A goal of our PDS teacher education program is to use action research as a vehicle toward developing an inquiry stance. As such, two lines of literature frame our work: *inquiry as stance* and *action research*.

Inquiry as Stance

Inquiry as stance is a concept that has been adopted in preservice literature and programs. But what does it really mean? According to Cochran-Smith and Lytle (2009), who coined the term, “the work of inquiry in and on practice involves making problematic current arrangements of practice, the ways knowledge is constructed, evaluated, and used in various educational settings, and the roles practitioners play in facilitating change in their own work contexts” (p. 14). In short, holding a stance of inquiry means that everything in one’s practice is subject to questioning. “Best practices” are not accepted without examination and teachers recognize their potential agency in affecting the context of teaching and learning. Holding a stance of inquiry also means that teachers acknowledge and reject the traditional role of teachers as knowledge consumers, relying on others to inform them of “best practices” (Borg, 2010; Goodson & Hargreaves, 1996). Instead, teachers holding an inquiry stance adopt a role of knowledge generators, pushing themselves to question and evaluate that which might be assumed. It is because of, and through, such reflection that teachers launch investigations into teaching and learning, actively creating their own knowledge rather than passively consuming it (Cochran-Smith & Lytle, 2009).

According to Ravitch (2014), holding inquiry as stance involves three elements: (1) developing and refining understanding of reflection and its role, (2) viewing inquiry as an everyday ethic, and (3) viewing inquiry as central to our professional vision. It is “being committed to our own processes of self-reflection and the continual investigation into, and systematic, data-based critique of, our practices and the contexts – both macro and micro – that shape them” (p. 7). Ravitch (2014) asserts that inquiry as stance allows teachers to push back against narratives that have marginalized particular groups. We assert that teachers are one of these groups, and holding an inquiry stance enables them to redefine their agency in this effort (Price & Valli, 2005).

Action Research

As we consider both how to develop an inquiry stance and how to operationalize one’s inquiry stance, we turn to action research. Action research is “a process of systematic inquiry, usually cyclical, conducted by those inside a community...[I]ts goal is to identify action that will generate improvement the researcher believes important” (Hinchey, 2008, p. 4). Action research positions teachers as researchers, turning the ideas of teacher as technician (Gray, 2007) on their heads. *Teachers as researchers* seek to surface and problematize taken-for-granted assumptions that underlie work in schools. Reflection is intentional and inward (Dana & Yendol-Hoppey, 2014). There are many models of action research, but all follow a similar flow. Typically, it all begins with a question. A question that a teacher or group of teachers are interested in that will somehow better student learning and expand their pedagogical knowledge. The teacher, then, seeks out more information about that question by consulting with professional practitioner resources, and ideally, academic research. Using what they learn, they tweak their question into something researchable and design an action plan to address the question. The plan includes the collection of data to monitor the action’s outcomes. The data are analyzed, the teacher reflects on the findings, and they determine the next steps or the next question that has now been raised (Dana & Yendol-Hoppey, 2014; Mills, 2013; National School Reform Faculty, n.d). The action research process is often depicted as a sequence, but in reality, this process mimics the life of a classroom. Teachers navigate through and between steps in a nonlinear fashion (Dodman et al., 2013). Action research assumes a sociocultural and situated view of learning whereby the researcher and their findings cannot be separated from their context.

Action research has a long history in education, stemming from Dewey’s (1933) work in reflective practice. The actual term originated from Lewin (1946), as he studied increasing democratic participation for underrepresented groups. However, in 1954, Corey characterized action research in education as “no more than attempting to solve practical school problems by using research methods” (p. 379). Since that time, research on action research has found it to be a productive means of professional development that enhances reflective capacity (Zeichner & Noffke, 2001) and collective knowledge when conducted with a group of peers (Hagevik, Aydeniz, & Rowell, 2012). The process is also seen as one that can be liberating for teachers in the context of increased accountability demands and narrowed teaching (Hutchinson, 1996).

While action research has been promoted as a tool for reflection and professional development and is a common element in teacher preparation programs, its challenges and limitations in preservice programs have been documented. For example, the context of a preservice teacher is one of limited agency by default. Preservice teachers are not employed by the school in which they work and their classroom is not their own. While they must independently plan and teach for a required length of time during their placement, they are bound by layers of power that in many ways dictate what and how they will teach (Anderson & Stillman, 2013). In a traditional teacher preparation structure, where the school and university are often more acquaintances than partners in teacher preparation, these power dynamics can be magnified as candidates engage in a predictable routine of learning to teach—first they observe, then they teach discrete assignment-driven lessons in classrooms, and ultimately in a final semester of their program they perform instruction meant to mirror that which they have observed or learned about in university courses (Castle & Reilly, 2011; Montecinos et al., 2011).

Knowledge is considered to be held by mentor teachers and theory, not constructed by the candidates (Perry & Power, 2004). Although the professional development school structure is meant to flatten some of these hierarchical barriers to candidate learning (Castle, Fox, & O’Hanlan Souder, 2006), such obstacles still exist (Klieger & Wagner, 2014). Additionally, the foci of preservice teachers’ action research endeavors tend to be technical in nature rather than critical (Clarke & Fournillier, 2012; Gore & Zeichner, 1991). This could be in large part due to the inexperience of candidates who are, in many ways, more focused on the context (e.g., behavior management) and discrete skills of their teaching than the content or process (Ridley, Hurwitz, Hackett, & Miller, 2005). Preservice programs that have recognized and addressed this tendency for reflection during action research have reported greater development of reflection in their candidates (Hagevik, Ayeniz, & Rowell, 2012). Additionally, there has also been a warning call by scholars to refrain from romanticizing the effects of action research on preservice teachers (Zeichner, 2009).

Surprisingly, a paucity of research exists concerning how candidates, who develop an inquiry stance and operationalize it through action research, maintain that stance after graduation. To address this gap, we studied our candidates at the conclusion of their action research and one year after completion. We asked the questions: How do candidates view the role of action research in their teaching during their internship and first year of teaching? To what extent do graduates maintain and express an inquiry stance during their first year of teaching?

Methods

Description of the PDS Program

The Elementary Education program is a thirty-nine credit hour licensure plus M.Ed. program that uses a Professional Development School (PDS) model. At the time of this study, there were three program tracks. Tracks 1 and 2 included two 8-week internship placements during one semester. Track 3 consisted of two 16-week internships that spanned two semesters. At the time of this study, each track culminated with a capstone action research course taken the summer following student teaching. Prior to the semester of this study, candidates in the program did not conduct any actual action research; they took the capstone course and developed a hypothetical study. Faculty realized that this was not the best way to prepare teachers for development and enactment of an inquiry stance.

To address this issue, candidates then began conducting action research during their full-time internship, but at this point, the capstone research course was unable to be moved. Throughout four weeks of independent teaching during their fulltime internship, candidates engaged in action research. Since the capstone research course occurred the semester after student teaching, other supports were provided to scaffold the candidates as they completed their research. Four workshops were held at the beginning of the term to provide an overview of action research. The focus of these workshops was understanding what action research is and how to choose an area of inquiry and design a study. An action research guidebook developed by program faculty was provided to each teacher candidate. Faculty who were familiar with action research held regular meetings with university supervisors to help them understand the process and its desired outcomes. University supervisors then held regular meetings throughout the internship with candidates where candidates shared their research processes and ongoing findings. At the conclusion of their internships, candidates shared their action research findings with their school sites. Further analysis of data and preparation of findings were addressed in the summer research course.

Candidates' action research spanned a variety of topics and complexities. Their studies included the investigation of behavioral techniques, instructional strategies, and inquiry regarding social-emotional outcomes. The foci of candidates' studies were developed from wonderings they discovered during their teacher preparation experiences. Faculty worked with candidates to uncover their inquiries and develop researchable questions. Candidates were directed to examine existing research on their topics to help them clarify and mold their questions. While faculty helped them in this process, this research process allowed the candidates the space to design their own inquiry. Candidates' studies were assessed during the research course when they submitted a full research report. The research report included a literature review and a detailed report on the research process, findings, and implications. It also included an opportunity for candidates to reflect on their research process and subsequent learning.

Participants

All participants were graduate students in the elementary education master's licensure program at a large mid-Atlantic public university. Twenty-six candidates completed an exit survey at the conclusion of their action research. One year later, ten of twenty-six candidates participated in follow-up interviews. These ten participants were graduates of the program who were all completing their first year of full-time teaching in local elementary schools. Nine were teaching in public schools, while one was employed in a private school.

Data Collection

Survey. A survey was administered using Survey Monkey following the completion of the capstone research class. The survey consisted of eleven questions, which included one demographic question, three open-ended response questions, five Likert-scale questions with optional open-ended responses, and one yes/no question with optional open-ended response. The final question asked if participants were willing to be interviewed at the conclusion of their first year. If they responded yes, they could enter their contact information into the survey or, if they wished to keep their responses

anonymous, email the lead researcher with their contact information. Twenty-six participants from across the three program tracks responded to the survey. Of the three program tracks, 38% of the respondents were in Track 1; 35% were in Track 3; and 27% were in Track 2. Responses were anonymous, unless participants indicated that they would be willing to participate in a follow-up interview at the end of their first year. Survey questions asked about such topics as helpful supports, readiness to make changes to instruction based on data, views of teaching, role as a teacher, and likelihood of engaging in action research as professional development in the future.

Interview. The final survey question included consent to be interviewed following their first year of teaching. Eleven survey respondents indicated they would be willing to participate in the follow-up interview. Ten of the eleven were able to be contacted for a follow-up interview at the end of their induction year of teaching. The semi-structured interview included eight questions and was completed in person or over the phone. The ten respondents represented the three program tracks: Track 1 (n=4), Track 2 (n=4), and Track 3 (n=2).

Data Analysis

Likert-scale survey responses were analyzed using descriptive statistics. The interviews and open-ended survey responses were analyzed inductively (Hatch, 2002). Interviews were audio-recorded and then transcribed. Three of the authors conducted open coding of the data and then met to develop shared codes. The transcripts were read repeatedly and salient domains were identified and coded. Data was reread and a record was kept of evident relationships within the data. Then, we looked within the domains for richer representations. Finally, we searched for connections, or themes, across domains. The themes are represented in our findings below. The other two authors, who were program graduates and study participants, member-checked the findings. They read all the findings, discussed them with the other authors, and confirmed that the findings represented their own experiences.

Findings

Survey

In order to determine how candidates maintained their potential inquiry stance after graduation, we first wanted to gain an understanding of how graduates viewed their action research experience and its influence on their learning and reflection. We administered a survey to candidates at the conclusion of their action research after they took the capstone research course.

Perceptions of action research experience. According to the survey responses, 73% of participants felt that action research affected how they viewed their teaching, 92% of participants felt ready to make changes to their instruction based on data, and 65% felt likely to very likely that they would participate in this type of professional development when they began teaching (see Table 1).

Concerning how action research affected their view of their teaching, candidates' short answers varied. There were expressions related to change in confidence, willingness to take risks, and enhancing their awareness of their actions (see Table 2).

Candidates also noted that action research contributed to the systemization of their practice. As one candidate stated, action research enabled her to operationalize what she ‘knew’ about being a good teacher:

I know that good teachers make changes to their lessons and instruction methods based on feedback (both formal and informal) from their students. I hadn’t thought about this being a formal process, but the action research process showed me the benefits of having a specific question or wondering in mind when analyzing one’s teaching. This then allows the teacher to focus his or her attention on the question at hand.

Another participant, who actually conducted action research during her first year of teaching, passionately explained its influence on her teaching:

Action research allows you to look at your classroom, see what works and what doesn't, and then attempt to change it in a systematic way that enables you to collect data, analyze it, and then either reformulate the question or strengthen its results. I think that it is truly the best way to not only assess your students but self-assess your own instruction. I don't really see myself teaching without it.

Table 1. Survey Results

	Very Likely	Likely	Unlikely	Very Unlikely	Neutral
How likely are you to engage in action research when you begin teaching?					
Track 1	3 (30%)	5 (50%)	0 (0%)	0 (0%)	2 (20%)
Track 2	1 (14%)	2 (29%)	0 (0%)	1 (14%)	3 (43%)
Track 3	2 (22%)	3 (33%)	2 (22%)	0 (0%)	2 (22%)
	Very Ready	Ready	Unready	Very Unready	Neutral
How ready do you feel to make changes to your instruction based on data?					
Track 1	2 (20%)	8 (80%)	0 (0%)	0 (0%)	0 (0%)
Track 2	1 (14%)	5 (71%)	0 (0%)	0 (0%)	1 (14%)
Track 3	2 (25%)	5 (63%)	0 (0%)	0 (0%)	1 (12%)
	Yes	No			
Did your action research affect how you view your teaching?					
Track 1	9 (90%)	1 (10%)			
Track 2	4 (57%)	3 (43%)			
Track 3	6 (67%)	3 (33%)			

Table 2. How Did Action Research Affect Your Teaching? Short Answer Response Summary

	Number of participants	Representative responses
Changes in confidence	3	I picked to do my action research in an area (math), I wasn't as comfortable in teaching. After conducting my search, I now have more confidence in teaching math using hands-on activities.
Willingness to take risks	2	It showed me that you have to be willing to try new things to make improvements in the classroom
Enhancing awareness of their actions	9	Action research allows you to look at your classroom, see what works and what doesn't, and then attempt to change it in a systematic way that enables you to collect data, analyze it, and then either reformulate the question or strengthen its results. I think that it is truly the best way to not only assess your students but self-assess your own instruction. I don't really see myself teaching without it.
Systemization of practice	3	I know that good teachers make changes to their lessons and instruction methods based on feedback (both formal and informal) from their students. I hadn't thought about this being a formal process, but the action research process showed me the benefits of having a specific question or wondering in mind when analyzing one's teaching. This then allows the teacher to focus his or her attention on the question at hand
No short answer response	2	

While the majority of participants viewed action research as influential to their teaching, seven participants felt that the process was redundant since they had already “entered teaching with a reflective attitude.” One participant, in particular, viewed the formal action research process as a burden because she believed her teaching to be independently inquiry-oriented. She stated, “I found the entire process/ project/ paper to just be a formality for a process I already use. The AR assignment

just caused unnecessary stress and time during my student teaching.” This participant also shared that her university supervisor found the action research process to be “unrealistic, given [her] time-constraints and the fact that [she] did not have enough time to get to know the students before implementing a change.” This participant’s program track consisted of two 8-week internships during one semester. Although this candidate was enrolled in a faster-paced track, she was the only survey participant in that track with such a perspective; all other survey respondents in her track found action research to be influential in how they perceived their teaching.

Supports. We also asked participants about supports that they felt were most helpful during their preservice action research. In their open-ended answers, respondents cited human resources at the school as being the most significant factor contributing to their perceived success with action research. Human resources included their mentor teacher, university supervisor, fellow interns, and/or content/pedagogical specialists at their school. Highlighting this, survey responses indicated that mentor teachers’ involvement was positively related to participants feeling that action research affected their teaching. Survey responses also indicated that there was a positive relationship between the perceived involvement of the university supervisor and the perceived involvement of the site facilitator. The site facilitator in our PDS model is a school-based instructional faculty member who serves as a liaison between the university and the school. We do not have further data about this relationship. However, we interpret this finding as promising for the influence of collaboration between university and school on candidate success. Only one participant noted that none of their PDS human resources (mentor teacher, site facilitator, university supervisor) were helpful regarding their action research. Upon beginning the integration of action research into the internship semester, the faculty deliberately sought to engage all PDS partners in facilitating action research with candidates. It seems from these findings that this joint facilitation was important to candidates’ processes, but we still have work to do to ensure all interns are adequately supported and that all partners feel and communicate the value of action research to developing inquiring graduates.

The capstone research course was cited as the second most helpful element for candidates, although, perhaps unsurprisingly, most respondents shared that they would have found it even more helpful before or during their action research. This finding led program faculty to make the capstone course concurrent with the internship. Hopefully, this adjustment will produce greater consistency of information for candidates.

Interview

To answer our second research question, ten graduates participated in a follow-up interview one year after graduation. At this time, the participants were at the end of their first year of full-time teaching. These interviews questioned graduates’ teaching contexts, potential influence of action research on their teaching to ascertain their enactment of an inquiry stance, readiness for data use, barriers to conducting action research during their first year of teaching, and their views of themselves as teachers. We begin our findings by reporting on the context of participants’ first year. This initial report establishes the environment in which our participants did or did not enact an inquiry stance. Next, we present our findings according to themes related to the influence of action research on participants’ teaching.

Teaching contexts. In their interviews, participants described their first year in nuanced ways. Primarily, they described it as challenging, but also explained that it was filled with learning. As one participant noted, “it was wonderful, awesome, amazing, horrible, stressful, worst, and best year.” The schools in which participants worked were diverse in student demographics and school cultures, with school cultures being described as individualized, balkanized, or embodying characteristics of professional learning communities (Hargreaves & Fullan, 2012). Across school cultures, all ten participants described beliefs and actions that aligned with an inquiry stance. During their interviews, they consistently came back to a description of themselves as a teacher as a facilitator and coach, community builder, safe adult, and partner. Acting as a facilitator/coach/community builder requires a great deal of reflection and inquiry. They communicated that they were continuously asking questions and seeking answers to best address the needs of their students. In the development and enactment of their stances within these varying environments, participants noted action research as being influential in different ways. These ways are described below.

Influence of action research. As participants talked about their experiences with action research and its influence in their teaching, they revealed their stances toward inquiry in three main forms.

Action research topic. When asked if their teaching this first year had been influenced by action research in any way, three of the ten participants noted that the topic and findings of their preservice action research informed their teaching during their first year. For these two participants, they saw the influence of action research in a more application-oriented way. That is, they focused less on how the process impacted them, and more on how they were able to apply what they learned instructionally. One participant described action research in the following way:

My action research [in the program] was very focused on ELLs and on students from more impoverished backgrounds and how to build their vocabulary. And, because I spent a lot of time reading and researching that [in the program], I already had that knowledge base when I came in to teach. So, it was more about finding the curriculum that worked best and figuring out how to implement that in the classroom. It wasn't having to learn a whole new system at once.

These participants described themselves in ways consistent with teachers as knowledge-generators (versus knowledge consumers). They generated new knowledge for themselves during their action research and that knowledge informed their practice. This view of themselves was empowering as they moved into their first years of teaching because they, now, had the skills to keep generating knowledge, instead of only passively consuming it.

Facility with data. All ten participants talked about being ready for data use in their first year, but six participants explicitly connected this understanding and skill to conducting their preservice action research. They described a greater facility with data that was advantageous in their data-driven school environments.

Participants often talked of collecting their own data and using testing data to analyze student progress and determine next steps. Data-driven decision making, the systematic collection and analysis of data to inform instructional decisions (Hamilton, Halverson, Jackson, Mandinach, Supovitz, & Wayman, 2009; Mandinach & Gummer, 2015), was overwhelmingly represented in participants' responses. They attributed their preparedness for data use to the program and, specifically, to action research. There was talk of how their confidence and skills with data enhanced

their willingness to take risks because they could monitor their outcomes. They also spoke of data as enhancing their responsiveness to student needs. As two participants stated:

[Action research] definitely affected the way I look at data and- and just trying to find little ways and- I feel like I was more, more willing to change what I was doing in order to see if it caused any effects.

[Action research] also helped me in understanding why you need data to show- It helped me to see okay, this is how you connect and identify needs beforehand and adjust your instruction to meet those needs.

Additionally, two participants likened the data collection of action research to the goals they had to create and track for their yearly evaluation.

I feel like the task was a lot less overwhelming for me than other people...I feel like having done something very similar to SMARTR goals, last year, helped me understand the importance of giving a pre-assessment and giving a post-assessment and working in the middle and collecting that data.

All participants who talked about data did so in terms of data-driven decision making, which may or may not have been explicitly demonstrative of a reflective inquiry stance. However, data is essential to investigating those questions and wonderings that arise for reflective teachers. It seems that teachers were often pushed to follow their wonderings or be more responsive to students because they felt an increased confidence with monitoring impact.

Action research and micro-inquiries. Two participants noted that they conducted action research their first year and three participants named specific action research ideas for year two. However, all ten participants described actions that embodied what we termed ‘micro-inquiries.’ These micro-inquiries began for participants with a question about their practice, investigation into possible actions, acting based on what they learned, and then evaluating the outcomes. These were not formal action research endeavors, but without necessarily meaning to, the participants engaged in the action research cycle; they enacted an inquiry stance naturally in their practice:

If I see a problem in the classroom I'll do the research what other people have done and then I'll, I might try it myself, and then you know... see whether, or not, it works. Which is, I mean, it is definitely action research, but it's not as formalized.

I didn't write anything down. But, I was constantly reflecting and thinking of different ways to do things, and talking to different people, and researching kind of in our ways. But, never did I make it official or anything.

Participants cited several barriers to conducting a formal action research effort their first year. These barriers were both external and internal. External barriers included the workload of their first year and the volume of paperwork they were expected to complete. Although participants all engaged in a PDS internship where they worked closely with their mentor teachers and the school and felt very involved in the day to day life of teaching during their internships, they could not anticipate the added responsibilities of being the teacher of record. Their first year was spent trying to navigate the immense workload of teaching. This led into a second cited external barrier: time. Despite the program's attempt to demonstrate to candidates the potential integration of action research into what they already do, many participants still saw formal action research as an add-on to their responsibilities: “[I haven't done formal action research due to] the sheer volume of documents and paperwork that I'm currently doing... I feel like I never even have any time to get all this stuff done.”

Finally, two participants noted that there was a lack of value placed on action research among their colleagues. Because colleagues did not see a place for it, as the first-year teacher, they did not feel it appropriate to move forward with the effort:

When I mentioned action research, because I did it with one of my goals with math this year, there really is no interest. I don't know if that is like behind the times from the public school, or if it's that we have such an open environment, smaller, that you don't need a formal regimented [process] as action research. But, there really is no, "OH YEAH!" No fire, no passion, behind it.

The internal barriers cited by participants aligned with these external obstacles, particularly the feeling to just want to "get through the year." As a first-year teacher, participants felt that they were just trying to find their footing in the first year and develop strategies for organization and managing their workload. They often felt overwhelmed and, to them, action research was not something even on their radar. Interestingly, another barrier cited by participants involved perceptions of data. Even after conducting action research and taking a graduate research course in which they learned about multiple sources of both quantitative and qualitative data, almost all participants described their data use during their year as majorly quantitative. Two participants particularly shared views that connoted data as being *merely* quantitative. They shared a reluctance to engage in action research because, in their estimation, they had questions about their classrooms that were not quantifiable, and therefore not worthy of research. As one participant shared:

"Reading groups are anecdotal...And, I dunno, I feel like for me it's more difficult to measure... like if I was doing action research, if it was working based on anecdotal then, when I am looking at math I am going okay they are getting 1 out of 2 and now they are getting 2 out of 2, you know. I dunno, for me that's more difficult. That probably has something to do with it. Because so much of it, I mean really, math is the only thing in k-1 that you have those number raw scores for. Everything else is more observation, and interaction with the kids, and anecdotal and things like that."

This raises the question of how to legitimize qualitative data when typical data-driven instruction, as realized in schools, emphasizes quantitative data over all else.

Discussion

In response to a dearth of literature regarding the development and maintenance of an inquiry stance for preservice teachers after graduation, we investigated the research questions: How do candidates view the role of action research in their teaching during their internship and first year of teaching? To what extent do graduates maintain and express an inquiry stance during their first year of teaching? From our post-action research survey, pre-service candidates were well on their way to developing an inquiry stance towards their teaching and felt positively about action research's potential as a professional development tool. One year later, we found that participants were clearly using data, asking questions about their practice, acting for their students, monitoring impact, and reflecting. According to Cochran-Smith and Lytle (1999) this questioning of one's own practice is at the heart of an inquiry stance. The findings in this study demonstrate that teachers who engage in a continuous cycle of asking questions and seeking answers hold an inquiry stance. Participants in this study met all three of Ravitch's (2014) requirements for an inquiry stance: they were metacognitive

about their self-reflection; they questioned their practice daily; and they focused on improving their professional practice. Only two participants engaged in formal action research, but all ten participants noted their engagement in micro-inquiries as part of a reflective teaching cycle. Their micro-inquiries resulted from the participants' questioning of their own practice through engagement in the action research cycle.

Based on our results, it seems that action research can be a way to empower novice teachers to act. Even if they were not conducting formal action research, they were consistently engaging in inquiry and action. Their responses indicated that action research had an impact on their ability to "notice" issues and recognize their questions about student learning. As one participant shared, "whether it be formal research, I think I'm always doing research in my class." From our study, we can, with confidence, conclude that action research is a strong vehicle for learning data-driven decision-making skills. Recommendations by Hamilton and associates (2009) include teachers making "data part of an ongoing cycle of instructional improvement." Participants' use of data to determine student strengths and needs and, then, drive instruction was clear.

What was less clear was how participants were enacting a stance that problematized larger classroom and or school arrangements or overtly questioned the power of their settings. As we analyzed our data, we were struck by how few participants noted structural or cultural wonderings. Participants described micro-inquiries that were soundly instructional, and while they seemed to consider their role in students' successes or failures, they did so in order to offer instructional fixes related to achievement measures. This caused us to wonder if we as a faculty *expected* to see evidence of this questioning the larger power structures of schools in graduates who engaged in action research during their program. For example, were we assuming that an inquiry stance would inherently foster enough agency to move program graduates to challenge issues of social justice? The results of this study provide evidence of a clear need for a broader conversation among the faculty as to what we want student teaching action research to accomplish and how we might develop structures and cultures to enable those goals.

These data also led us to realize that we need to be clear about differences in terms and concepts: critical reflection, data-driven decision making, and inquiry. While these concepts overlap in key ways, we had many conversations about whether participants were really expressing an inquiry or reflective stance. As a research team, we struggled with the implications of defining these terms, realizing the need for a faculty-wide conversation. How we conceptualize these terms and approach action research with our candidates might have profound impact on their development and maintenance of an inquiry stance.

Program Changes

Our findings affected our PDS program in very strong ways. Survey data revealed that the teacher candidates would have modified their action research in ways they felt would have strengthened it if they had taken the action research course prior to conducting their own action research. As a result of these data, the course sequence was modified and the capstone course is now taken concurrently with the final semester of internship, during which action research is conducted. This aligns the program with many other teacher preparation programs that include action research as a component of student teaching (Lattimer, 2012; Zambo & Zambo, 2007). The course is front

loaded so that it does not meet during the teacher candidates' four-week period of independent teaching. The movement of this course provides the teacher candidates with regular, systematic support from their course instructor while they engage in action research. Teacher candidates now have the ongoing support of their course instructor in addition to their university supervisor. The candidates are organized into course sections by school site, which provides additional systematic support during the action research process. They have peers in their course who understand their specific school settings, who can offer support and enable the creation of professional learning communities (Hord, 2009; Vescio, Ross, & Adams, 2008). On-site instruction in PDS schools allows the course to be open to practicing teachers, which could foster more collaborative research.

Future questions may include an examination of joint action research between a teacher candidate and their mentor teacher. Regular collaborative school-based meetings between university supervisors and candidates were encouraged during the time of this study, but were not necessarily conducted by all supervisors. Since the capstone course is taught by university faculty and is now concurrent with the internship, it is our hope that the unevenness of support from university supervisors will be mitigated by this relocation of the course in the sequence. Additional data need to be gathered to discern how the most recent change in the course sequence/structure affects graduates' inquiry stance during their first year. This study was an important first step in investigating the development and maintenance of candidates' inquiry stance. However, more research is needed to address some of the questions raised by this initial study.

References

- Anderson, L. M., & Stillman, J. (2013). Student teaching's contribution to preservice teacher development: A review of research focused on the preparation of teachers for urban and high-needs contexts. *Review of Educational Research*, 83(1), 3-69.
- Borg, S. (2010). Language teacher research engagement. *Language Teaching*, 43(4), 391-429.
- Castle, S., Fox, R., & O'Hanlon Souder, K. (2006). Do Professional Development Schools (PDSs) make a difference: A comparative study of PDS and non-PDS teacher candidates. *Journal of Teacher Education*, 57(1), 65-80.
- Castle, S., & Reilly, K. A. (2011). Impact of Professional Development School preparation on teacher candidates. *National Society for the Study of Education*, 110(2), 337-371.
- Clarke, P. A. J., & Fournillier, J. B. (2012). *Teaching and Teacher Education*, 28(5), 649-660.
- Cochran-Smith, M., & Lytle, S. (2009). *Inquiry as stance: Practitioner research for the next generation*. New York, NY: Teachers College Press.
- Corey, S. M. (1954). Action research in education. *The Journal of Educational Research*, 47(5), 375-380.
- Dana, N., & Yendol-Hoppey, D. (2014). *The reflective educator's guide to classroom research* (3rd ed.). Thousand Oaks, CA: Corwin.
- Dewey, J. (1933). *How we think: A restatement of the relation between reflective thinking to the educative process*. New York: Heath.

- Dodman, S. L., Fulginiti, K., Campet, M., Cavallero, R., Hopkins, A., & Onidi, C. (2013). Recognizing choice: Working for social justice with action research. In K. Zenkov, D. Corrigan, & R. Beebe. (Eds.), *Professional development schools and social justice: Schools and universities partnering to make a difference*. Lanham, MA: Lexington Books.
- Farrell, T. (2003). Learning to teach English language during the first year: Personal influences and challenges. *Teaching and Teacher Education*, 19(1), 95-111.
- Goodson, I., & Hargreaves, A. (1996). *Teachers' professional lives*. London, England: Falmer Press.
- Gore, J. M., & Zeichner, K. M. (1991). Action research and reflective teaching in preservice teacher education: A case study from the United States. *Teaching and Teacher Education*, 7(2), 119-136.
- Gray, S. L. (2007). Teacher as technician. *Policy Futures in Education*, 5(2), 194-203.
- Hamilton, L., Halverson, R., Jackson, S., Mandinach, E., Supovitz, J., & Wayman, J. (2009). *Using student achievement data to support instructional decision making* (NCEE 2009-4067). Washington, DC: US Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance. Retrieved from <https://www.relcentral.org/uncategorized/using-student-achievement-data-to-support-instructional-decision-making/>
- Hagevik, R., Aydeniz, M., & Rowell, C. G. (2012). Using action research in middle level teacher education to evaluate and deepen reflective practice. *Teaching and Teacher Education*, 28(5), 675-684.
- Hargreaves, A., & Fullan, M. (2012). *Professional capital: Transforming teaching in every school*. New York, NY: Teachers College Press.
- Hatch, A. (2002). *Doing qualitative research in education settings*. New York, NY: State University of New York Press.
- Hinchey, P. (2008). *Action research primer*. New York, NY: Peter Lang.
- Hord, S. M. (2009). Professional learning communities. *Journal of Staff Development*, 30(1), 40-43.
- Hutchinson, N. L. (1996). Being teachers or freeing teachers? *Teaching and Teacher Education*, 12(1), 109-114.
- Klieger, A., & Wagner, T. (2014). Listening to the voices in Professional Development Schools: Steering committee as promoting partnership. *Australian Journal of Education*, 39(10), 135-144.
- Lattimer, H. (2012). Action research in preservice education: Is there value added? *I.E.: Inquiry in Education*, 3(1), article 5.
- Levin, B. B., & Rock, T. C. (2003). The effects of collaborative action research on preservice and experienced teacher partners in Professional Development Schools. *Journal of Teacher Education*, 54(2), 135-149.
- Lewin, K. (1946). Action research and minority problems. *Journal of Social Issues*, 2(4), 34-46.
- Mandinach, E. B., & Gummer, E. S. (2015). Data-driven Decision Making: Components of the enculturation of data use in education. *Teachers College Record*, 117(4), 1-8.
- Mills, G. E. (2013). *Action research: A guide for the teacher researcher* (5th ed.). New York, NY: Pearson.

- Montecinos, C., Walker, H., Rittershausen, S., Nuñez, C., Contreras, I., & Solís, M. C. (2011). Defining content for field-based coursework: Contrasting the perspectives of secondary preservice teachers and their teacher preparation curricula. *Teaching and Teacher Education*, 27(2), 278-288.
- National Association for Professional Development Schools. (n.d.). *Nine Essentials*. Retrieved from <http://napds.org>.
- National Association for Professional Development Schools. (2008). *What it means to be a professional development school*. South Carolina: The Executive Council and Board of Directors.
- National Council for Accreditation of Teacher Education. (2010). *Transforming teacher education through clinical practice: A national strategy to prepare effective teachers: Report of the Blue Ribbon Panel on Clinical Preparation and Partnerships for Improved Student Learning*. Washington, DC: Author.
- National School Reform Faculty (n.d.). *Cycle of inquiry*. Retrieved from http://www.nsrffharmony.org/system/files/protocols/smp_cycle_inquiry_0.pdf
- Perry, C. M., & Power, B. M. (2004). Finding truths in teacher preparation field experiences. *Teacher Education Quarterly*, 31(2), 125-136.
- Price, J. N. (2001). Action research, pedagogy, and change: The transformative potential of action research in pre-service teacher education. *Journal of Curriculum Studies*, 33(1), 43-74.
- Price, J. N., & Valli, L. (2005). Preservice teachers becoming agents of change: Pedagogical implications for action research. *Journal of Teacher Education*, 56(1), 57-72.
- Ravitch, S. M. (2014). The transformative power of taking an inquiry stance on practice: Practitioner research as narrative and counter-narrative. *Perspectives on Urban Education*, 11(1), 5-10.
- Ulvik, M., & Riese, H. (2016). Action research in pre-service teacher education- a never-ending story promoting professional development. *Professional Development in Education*, 42(3), 441-457.
- Vescio, V., Ross, D., & Adams, A. (2008). A review of research on the impact of professional learning communities on teaching practice and student learning. *Teaching and Teacher Education*, 24, 80-91.
- Zambo, D., & Zambo, R. (2007). Action research in an undergraduate teacher education program: What promise does it hold? *Action in Teacher Education* 28(4), 62-74.
- Zeichner, K. M., & Noffke, S. (2001). Practitioner research. In V. Richardson (Ed.), *Handbook of research on teaching* (4th ed., pp. 298-330). Washington, D.C.: American Educational Research Association.
- Zeichner, K. M. (2009). *Teacher education and struggle for social justice*. New York, NY: Routledge.

Stephanie Dodman is an Assistant Professor in the Graduate School of Education at George Mason University. She teaches courses in curriculum and instruction. Her research is focused on teacher learning and leadership.

Lois A. Groth is an Associate Professor in the Graduate School of Education at George Mason University. She teaches literacy methods and facilitates the Elementary Education Professional Development Schools Network.

Sophia Ra is a former elementary school teacher and is currently a doctoral candidate at George Mason University in curriculum and instruction. Her research interests involve teacher learning and preparation.

Anne Baker finished her Master's with George Mason University in 2013. She is currently a fifth-grade teacher with Fairfax County Public Schools.

Samira Ramezan is a 3rd grade Advanced Academics instructor at Wolfrap Elementary. She actively engages in action research and professional development in order to foster self-actualized students and lifelong learner.