Using Action Research as a Signature Pedagogy

to Develop EdD Students’ Inquiry as Practice Abilities

This essay was developed while the author served as a CPED Writing Fellow on the topic of developing inquiry skills in doctoral students.

Abstract

In this essay, I have described the role of action research (AR) in developing Inquiry as Practice among students in a CPED-guided EdD program. The essay was focused on issues such as

(a) the need for developing Inquiry as Practice skills; (b) a rationale for using AR to develop inquiry skills; and (c) developing Inquiry as Practice skills through cycles of AR. I provided a rich, detailed description of how AR has been and continues to be used to develop Inquiry as Practice abilities among students in one EdD program. The essay concluded with a critique of using AR and a summary of the merits with respect to using AR to prepare students’ Inquiry as Practice orientations and skills.

Keywords: inquiry as practice; signature pedagogy; action research; EdD programs

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*No action without research; no research without action*

—Kurt Lewin

The epigraph attributed to Lewin above has aptly portrayed the inquiry orientation employed in the EdD in Leadership and Innovation program at [name deleted for review]. Like Lewin, research conducted by students in our practitioner-oriented EdD program has been action research (AR)—research that had its roots in, and has been conducted in a workplace setting by educators who knew the context, the problem of practice (PoP), and the change they were trying to effect. From the beginning of our program, faculty members easily and enthusiastically agreed AR had great potential to develop educational leaders/practitioners who could conduct sound inquiry as part of their practice. On the other hand, we have found fostering Inquiry as Practice skills has required much more effort. Over time, faculty members devised a progressive, developmental process that has been designed to systematically build inquiry skills through action research as students advanced through their doctoral preparation.

Evidence suggested our action research orientation has been effective in developing Inquiry as Practice skills among program participants. For example, students in our EdD program freely admitted they knew very little or nothing about research and did not employ systematic inquiry skills as part of their practices when they entered our program (Author, 2014; 2015; in press; 2017a; 2017b). By comparison, those who have completed one year of the program maintained they were developing emerging inquiry and research skills (Author, in press; 2017a). Importantly, graduates of the program readily claimed they had developed powerful, worthwhile research and Inquiry as Practice abilities, which they applied to their workplace settings (Author, 2014; 2015; 2016 b; 2017b). In this essay, I have described how this substantial growth in Inquiry as Practice abilities among students may be accounted for. Moreover, I have discussed the lessons that have been learned about how AR fostered the development of Inquiry as Practice among EdD program participants.

**Objective and Questions Guiding the Essay**

In this essay, I have explained the role of AR in developing Inquiry as Practice among students in a CPED-guided EdD program. Specifically, two compelling questions directed the work in this essay. The questions were:

(a) How has a ‘Signature Pedagogy’ approach like AR offered practitioners an effective tool to develop practice-appropriate inquiry skills for use in their workplace settings?

(b) How have we more deliberately connected students’ inquiry, both in their courses and dissertations, to their daily practice?

In the remainder of the essay, I have presented responses to these two questions that were organized around such issues as the need for inquiry skills, a rationale for using AR, and notably an extensive explanation of developing inquiry skills through cycles of AR. Additionally, I have concluded the essay with a critique of using AR and a summary of the merits of AR for preparing students’ Inquiry as Practice orientations and skills.

**The Challenge: Developing Inquiry as Practice**

As illustrated in the following quote from the CPED (2010) Design Concepts, developing Inquiry as Practice abilities has been considered to be a fundamental component of strong EdD programs. Further, as the definition suggested it was anticipated that program participants and graduates would draw upon these inquiry as practice skills as they initiated and subsequently continued to conduct inquiry in their settings.

Inquiry as Practice is the process of posing significant questions that focus on complex problems of practice. By using various research, theories, and professional wisdom, scholarly practitioners design innovative solutions to address the problems of practice. At the center of Inquiry as Practice is the ability to use data to understand the effects of innovation. As such, Inquiry as Practice requires the ability to gather, organize, judge, aggregate, and analyze situations, literature, and data with a critical lens. (CPED, 2010)

**On the Need for Developing Sound Inquiry as Practice**

Levine (2005) presented a harsh critique of the preparation of educational leaders in EdD programs. In this critique, Levine focused his severest criticisms on the poor preparation of school leaders with respect to conducting sound research that was relevant to their workplaces. He argued research preparation for these school leaders was “disconnected from practice” (p. 44). Further, Levine claimed this problem arose because students were being prepared as traditional researchers; not as educational leaders who were engaged in meaningful research connected to their professional practices, and which would serve them subsequently in their educational practice settings.

Shulman, Golde, Bueschel, and Garabedian (2006) articulated similar criticisms of EdD programs. Like Levine (2005), Shulman et al. expressed great concern about the mismatch between research preparation and career paths. Shulman and his colleagues also argued EdD students were being prepared as traditional researchers, rather than attaining inquiry skills better suited to their roles as educational leaders and educational practitioners. For example, Shulman et al. suggested, “education has struggled to strike a balance between the *practice* of education and *research* in education, in crafting doctoral programs” [italics in original] (p. 26). This uncertainty has resulted in the EdD being “widely regarded as a ‘PhD lite’” (Shulman et al., 2006, p. 27).

Thoughtful consideration of the criticisms articulated by Levine (2005) and Shulman et al. (2006) suggest several important implications with respect to inquiry in EdD programs. First, inquiry and research skills must be better matched to career demands and requirements. Thus, by using an *Inquiry as Practice* approach, EdD programs can better meet the needs of students who work in educational practice settings. Both critiques attest to the importance of developing practice-related inquiry skills appropriate to the workplace setting; not technical skills, which could not be used routinely in educational practice settings. Second, to be *practicable*, EdD students’ learning about research and the *research skills they develop must be connected to practice* in meaningful ways. By situating inquiry *in* practice, doctoral programs can capitalize on authentically connecting inquiry with practice and create potent learning circumstances, *laboratories of practice*, that include (a) learning initial inquiry skills by practicing them in relevant, real-world educational settings and (b) subsequently using those skills on an on-going basis in their workplace settings throughout their educational practice careers after their doctoral work.

Importantly, Shulman and his colleagues (2006) went beyond a critique of EdD research preparation by suggesting *hallmarks* that could be used to guide the (re)design of EdD programs to overcome the shortcomings related to inappropriate research preparation for practitioners. These hallmarks included (a) utilizing signature pedagogies, (b) developing practice-related research skills, (c) requiring students to be engaged in prior and ongoing practice experiences, and (d) expecting that program participants “would be skilled in carrying out local research and evaluations to guide practice” (p. 29).

In fact, thoughtful consideration of the hallmarks showed they have served as the foundation for some of the Carnegie Project on the Education Doctorate’s (CPED) Principles and Design Concepts for EdD programs (CPED 2009, 2010). Specifically as related to the EdD program that was developed at [name deleted for review], CPED (2009) principles 4, 5, and 6 were influential in developing students’ inquiry and research skills, just as they undoubtedly have been at other CPED-influenced programs. For example, Principle 4 focused on how programs provided students’ opportunities to analyze and develop solutions to field-based PoP. Principle 5 described how programs were to aid students in developing professional knowledge that integrated practical and research knowledge, which allowed them to link theory with inquiry. Additionally, Principle 6 explained that students were to generate and use professional knowledge to influence their practice.

With respect to CPED (2010) Design Concepts, many of them were related to research and inquiry and were consistent with the design of inquiry-based components of the program. The first, *problem of practice*, suggested a specific issue or concern that was rooted in a practitioners’ workplace setting and warranted some type of resolution. The second, *Inquiry as Practice*, proposed that students should be engaged in working on a problem of practice and determining solutions for it as they gathered, organized, analyzed, and used data to aid their thinking about the problem and was defined more fully above. The third, *laboratories of practice*, suggested students should be afforded opportunities to allow theory, inquiry, and practice to come together in productive ways in workplace settings as they worked toward resolution of the PoP. The fourth, *dissertation in practice*, recommended that the culminating experience reflect the scholarly practitioners’ comprehensive ability to employ inquiry in a meaningful way to address the PoP. These Design Concepts were taken into account as we designed research and inquiry skills that were specifically suited to educational practice settings.

**Definitions**

Before proceeding, it will be instructive to briefly consider definitions of some key terms as they were applied in this essay. First, AR in our program has been used to provide opportunities for students to examine a PoP by taking action in repeated cycles of inquiry (Mertler, 2017; Mills, 2014). Moreover, AR as carried out by students in our program and as described in this essay has tended to be more pragmatic in nature (Author, 2016a), being conducted by an insider who collaborates and works with others (Herr & Anderson, 2015) in schools, higher education settings, or other workplace venues. Signature Pedagogy has been used to refer to a set of practices, which were employed in the preparation of professionals (e.g., rounds in medicine), that were relevant to professional practice and were later used in that practice, such as AR, collaboration, and so on (Shulman, 2005).

**Responding to the Challenge: Using Action Research to Develop Inquiry as Practice**

**A Rationale for Using AR to Develop Inquiry Skills**

AR has served as an Inquiry as Practice approach that has guided our program efforts from the beginning because of its flexibility and functionality. We have highlighted AR in our doctoral program because various characteristics have made it appropriate for use by doctoral students as they developed an Inquiry as Practice approach and worked to investigate and resolve their PoP (Author, 2016a). For the purposes of the current discussion, we have briefly reviewed four characteristics that have been foundational with respect to developing students’ abilities to engage in Inquiry as Practice. See Author (2016a) for a more thorough discussion.

First, AR has been adaptable to a variety of contexts and to PoP situated in those contexts. Students in our program have explored PoP from contexts as diverse as K-12 classrooms, school sites and district offices, higher education settings, and other organizational venues. Second, AR has allowed students to ease into research over time. Because students in our program have conducted AR in cycles over time, it has permitted them to initiate and continue their Inquiry as Practice work in smaller, more manageable efforts. The various AR cycles students have conducted throughout the program along with the AR requirements have been depicted in Figure 1. See Figure 1.

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Insert Figure 1 about here.

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Third, use of AR has facilitated the development of systematic inquiry by offering a structured framework that can be employed by program participants. Specifically, AR has provided students with an elegant four-step process that can be used to conduct systemic inquiry about their PoP in their workplace settings. The AR four-step framework included (a) studying and planning, (b) taking action, (c) collecting and analyzing data, and (d) reflecting on the data (Mertler, 2017; Mills, 2015). The four-step process has been displayed in Figure 2. See Figure 2.

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Insert Figure 2 about here.

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Finally, AR has been shown to be sustainable during the program (Author, in press; 2017a) and afterward (Author, 2016b; 2017b). Students have considered AR in their workplaces because subsequent AR work has been built on previous efforts. Moreover, the *effects* of AR have also been shown to be sustainable. To illustrate, consider the following example. One graduate maintained, “Yes, it’s still part of our professional development program in our district … we have about 130 teachers and probably to varying degrees they’ve been influenced to utilize problem-based math a little bit more.”

To these four important characteristics about AR that made it appropriate for use by EdD students who conducted Inquiry as Practice in their workplaces, we employed a complementary component about teaching AR to doctoral students. Specifically, AR has been readily scaffolded over time to foster EdD students’ use of AR as an Inquiry as Practice approach. As noted in the following section, requirements during the cycles were incremental to make them quite manageable for students.

**Developing Inquiry as Practice Abilities through Cycles of Action Research**

We have used cycles of AR throughout our program as shown in the third column of Table 1. Our efforts in describing our use of cycles of AR, here, have extended the work of Author (2016c). Table 1 has been presented in three columns—(a) the course(s), (b) a description of inquiry skills that were being developed within the course(s), and (c) the attendant cycle of AR that was being conducted by students in the program during that timeframe. See Table 1. As demonstrated in the discussion that follows, these cycles have afforded students opportunities to ease into the work over time. Moreover, the cycles allowed students to “dig deeply”

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Insert Table 1 about here.

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into their PoP because they were conducting AR in their workplaces on an ongoing basis. Moreover, as evidenced in Table 1, the cycles of AR have been connected to a methods or methods-like course in the program.

In the next section, the cycles of AR have been described in detail to provide a clear explanation about how the cycles have been used to develop Inquiry as Practice among students participating in the program. Additionally, taken together, the descriptions demonstrated how the cycles were scaffolded to foster the development of workplace, relevant Inquiry as Practice skills among students. Taken as a whole, the descriptions also confirmed how these inquiry skills were consistent with Shulman et al.’s (2006) hallmarks, the criteria for strong doctoral programs; CPED’s (2009) principles 4, 5, and 6; and four of CPED’s (2010) design concepts including Problem of Practice, Inquiry as Practice, Laboratories of Practice, and Dissertation in Practice. Finally, in the descriptions about the cycles of AR throughout the program, we have demonstrated how students have been afforded opportunities to develop practice-appropriate Inquiry as Practice skills—skills that were employed as they developed transformative actions in their educational settings. Moreover, based on the presentation, we have made evident how students’ inquiry was purposefully and strongly connected to their daily practice throughout their coursework and during their Dissertations in Practice.

**First term AR including AR concept paper.** In TEL 706—Introduction to Doctoral Studies, students have been introduced to one of the Signature Pedagogies of the program, AR. Students learned about AR, the AR process, its value in Inquiry as Practice, and the long-term benefits of continuing to engage in AR throughout their professional careers as explicated in Mertler (2017) and Herr and Anderson (2015). As students began to develop their understanding of AR, they applied these ideas as they articulated and refined a PoP of their own choosing that was connected to their workplace setting. They also formulated their initial research questions related to their PoP. Moreover, they preliminarily identified and reviewed some initial research literature in a very limited way.

Based on their emerging understandings of AR, their PoP, and the initial, limited research literature connected to their PoP, they developed a brief, 10-12 page paper, in which they articulated their AR concept. In it, they communicated their PoP and contextualized it, drafted their initial research questions, provided a very concise summary of some literature relevant to their PoP, and developed some initial thoughts about methodology on how to address their PoP.

**Second term AR including Cycle 0 and preparing for Cycle 1.** In TEL 711—Strategies for Inquiry, students have been required to extend and refine their thinking about their PoP and their research questions. Note: It was not expected that students would necessarily develop an ultimate PoP or final research questions. Instead, we considered these early efforts to be developmental in nature. Thus, the PoP and the research questions have been viewed as ‘working PoP and research questions’ that were intended to be refined as students proceeded through the program. Moreover, the course was designed to aid students in developing understanding of quantitative and qualitative research, developing background on theories (along with TEL 703), and building skill in critically reading the literature (in conjunction with TEL 707). Texts such as Creswell (2015) on general research using quantitative and qualitative research techniques, Plano Clark and Creswell (2015) on reading research, and selected chapters from Brinkmann and Kvale (2015) on interviews were used to help facilitate students’ development of knowledge and skills appropriate to the AR work in which they were engaged. Finally, students designed an initial, simple interview or survey for their Cycle 0 research efforts and conducted that work.

In their AR efforts, the scope of the work for Cycle 0 has been limited. Typically, students conducted 3-4 interviews of their colleagues, staff members, or students in which they were focused on reconnaissance work and gathered additional data to support inquiry into their PoP, although some students have conducted a survey with a small group of informants. To prepare students for this cycle, they have read and discussed selected chapters from *InterViews* by Brinkmann and Kvale (2015). Their efforts were also facilitated by the instructor who conducted some instruction on interviewing and developing interview questions. Students have developed interview items, received feedback, and practiced with peers. Then, students conducted interviews and used simple analysis procedures such as listening to the audio files several times and determining three or four key ideas or concepts from the interviews. No formal analyses using coding, themes, etc. were conducted because faculty members felt students were not ready for such complex approaches at this point in their preparation.

Before presenting an illustration of one student’s work, I provide some background information about the student’s PoP. Holly’s (pseudonym), a graduate of our program, PoP was concerned with how to develop teachers’ technology skills to implement a ‘bring your own technology’ (BYOT) program at her school. Holly was newly appointed as principal of an elementary school. Further, the district had just implemented a BYOT initiative, which she was required to develop at her school site. As indicated in the descriptions in the cycles of AR below, she successfully implemented a BYOT effort in her school. Note: Holly’s work was used throughout this section to illustrate the various cycles of the AR process and how cycles of AR have culminated in the Dissertation in Practice (DiP).

To illustrate the nature of the work that typically has been performed in Cycle 0, consider the following example of Holly’s Cycle 0 project, in which she gathered reconnaissance data about her PoP—how to foster teachers’ use of student, hand-held technology (HHT, e.g., tablets, smart phones, etc.) for instructional purposes in their classrooms. Holly conducted interviews with key informants including two individuals from her campus who were higher users of HHT and two district instructional technology coaches. She interviewed them to determine what model BYOT classrooms would look like, as well as, the skills and resources that would be required by teachers implementing student, HHT for instruction. Respondents identified four potential barriers—support, time, resources, and professional development. They also indicated ways to overcome these barriers. Holly used all of this information as she developed plans for an intervention, which was devised to prepare teachers to use HHT during instruction. By conducting this reconnaissance work, she was better able to articulate her PoP and gained additional insight into how she might construct an intervention to deal with her PoP.

Additionally, in TEL 711, students have been required to think about their AR efforts for the next cycle, Cycle 1. In particular, they have written about their context and framed their efforts within the larger national or international work in the area. Moreover, they considered different theoretical perspectives and research related to their PoP to better understand it. This work on theoretical frameworks also assisted them in considering what their intervention might be to deal with their PoP. Based on their review of the theoretical perspectives and related literature, they wrote an initial literature review that included several theoretical perspectives. Further, they described an initial, potential intervention/innovation and also articulated some initial methodological work suitable for use in the next term when they were required to conduct Cycle 1 of their AR work. Again, this work on the methodology was quite basic and included sections on participants, their role as researcher, an initial intervention/innovation, and preliminary instruments to measure outcomes relevant to the Cycle 1 study. Notably, much of this work, which was foundational material, served as foundational material for later efforts as they crafted their dissertation proposals.

**Third term AR including Cycle 1.** In TEL 712, students have explored mixed methods AR using Ivankova’s (2015) text as a source to guide their learning. Additionally, they extended their learning about interviews by studying the remaining chapters of Brinkmann and Kvale’s (2015) *InterViews*. Students received their first formal preparation in analyzing qualitative data using Charmaz’s (2014) approach and they have employed the techniques with their own Cycle 1 data. They also learned a bit about surveys and developing survey instruments. Finally, they engaged in their first formal analysis of quantitative data as they worked through their own data and other data sets using SPSS and were guided by Green and Salkind (2014).

Cycle 1 AR efforts included developing and implementing a small-scale intervention, which was usually conducted with two or three teachers, staff members, or a small group of students. Generally, the intervention has been limited in scope to ensure the researcher could adequately implement it, monitor it for its effectiveness, and make changes as necessary. Frequently, data collection instruments have been more limited because students were developing their knowledge with respect to designing instruments. Thus, instruments were being tried out in this cycle with the intent of revising them as necessary grounded in information from this cycle. Based on the outcomes from this cycle, students typically have revised the research questions, intervention, and/or data collection procedures as seen later in the discussion of Cycles 2 and 2.5.

Consider the following example from Holly’s work that illustrated the nature of the work she conducted in Cycle 1. Holly initiated a small-scale intervention with eight teachers, four who used student, HHT (albeit in limited ways) and four who did not. In this cycle, she created a small community of practice (Wenger, 1998: Wenger, McDermott, & Snyder, 2002) in which participants learned with and from each other; and she provided professional development, time, support, and resources for using HHT for instruction using a collaborative apprenticeship model. This model was based on the work of Glazer, Hannafin, and Song (2005; Glazer & Hannafin, 2006) who suggested collaborative apprenticeship was a professional development model that “features reciprocal interactions between peer-teachers [PT, novices in using HHT] and teacher-leaders [TL, more experienced users of HHT]” (Glazer et al., 2005, p. 59). She also asked these participants to implement the use of HHT in a limited way during instruction in their classrooms. Results from quantitative and qualitative measures such as scores on Hall and Hord’s (2006) Stages of Concern measure, interviews and teachers’ journals about their implementation of HHT indicated the intervention was successful in increasing the use of HHT and it appeared to address the four perceived barriers.

Note that Term 4 in the program has been a summer term and students were not required to engage in AR activity.

**Fifth term AR including Cycle 2.** In TEL 701—Applied Methods of Quantitative Inquiry, students have focused their efforts on learning how to apply quantitative procedures and increase their understanding of quantitative data collection and analysis. For instance, they spent considerable time learning about reliability and validity. They have been involved in developing, fine-tuning, administering, and revising survey instruments. They extended their understanding of quantitative analysis by working in such areas as reliability analysis, ANOVA, regression analysis, and correlational procedures using SPSS (Green & Salkind, 2014). All of this work supported students’ understanding of these various techniques as they read the literature related to their own research efforts and/or as they used it in their research work. Additionally, in TEL 713—Applied Methods of Qualitative Inquiry, they extended their learning about qualitative data collection and analysis. Students expanded their learning about gathering and analyzing qualitative data including developing their qualitative analysis skills and learning to use qualitative software such as HyperRESEARCH (HyperResearch, 2016).

Cycle 2 AR efforts typically involved students in a variety of research endeavors, but the scope of work, usually narrowed as students took a ‘step to the side’ and examined their instruments in detail or worked on developing their interview skills, questions, and data analysis procedures. Some students chose to very carefully examine their survey instruments by administering, analyzing, and revising them. Others have chosen to revise, administer, and refine their interview questions. Still other students may have tested their intervention or a component of their intervention to ensure its effectiveness with respect to influencing outcomes associated with their PoP.

During Cycle 2, Holly refined her interview questions. In addition, she worked on revising and sharpening the prompts she used with teachers in their journal entries as they wrote about their assessments and reflections on implementation of HHT practices in their classrooms.

**Sixth term AR including Cycle 2.5.** In TEL 792—Research in the Leader Scholar Community, students have extended their research skills by working on their interviewing skills, data analysis skills, and so on. With respect to their AR, they were extending Cycle 2 by revising their intervention, data collection procedures, or data analysis procedures, and revising or extending their research questions as they prepared their dissertation proposals.

In Cycle 2.5, which was similar to Cycle 2, students took a step to the side and typically narrowed the focus of their AR efforts. Again, students selected various AR efforts that best met their needs with respect to conducting research on their own PoP. Some students worked on their survey instruments; while others refined their interview questions. By comparison, others worked to refine and finalize their intervention or a component of their intervention for their PoP.

During this cycle, Holly spent time developing and exploring a digital ethnography component, which she subsequently used in her Dissertation in Practice. The digital ethnography component included asking teachers what was happening in the digital image that was taken while they were using HHT in their classrooms. Additionally, she worked on developing stronger interpretive skills for analyzing her qualitative data.

**Seventh and eighth terms AR including Cycle 3—Dissertation in Practice.** In this culminating activity, students extended their work by conducting a Dissertation in Practice (DiP) based on their previous cycles of AR. During the DiP, students fully implemented an intervention designed to effect change with respect to their PoP, engaged in comprehensive data collection, and conducted thorough data analyses. During the first of these terms (term 7), the intervention was implemented and data were collected and analyzed. In the subsequent term, students finished the data analyses and completed writing the DiP.

Holly conducted a DiP in which she extended her efforts from the previous cycles; particularly the efforts in which she engaged during Cycle 1. In the dissertation (proposal and the dissertation itself), Holly used data and information from her previous efforts during earlier cycles to inform the conduct of the AR DiP. For example, she used data from Cycle 0 to help establish the context for her work in Chapter 1 of the AR DiP. In particular, she discussed the barriers noted by respondents in Cycle 0 reconnaissance work that hindered them from using student, HHD during instruction in their classrooms. In Chapter 2 on theoretical perspectives *and* research guiding the study, she described results that indicated the intervention used during Cycle 1, when she conducted her small-scale intervention, was effective. Moreover, in Chapter 3, as she described her method, Holly drew upon the work she had done earlier in Cycles 1, 2, and 2.5 to inform her method including using well-developed instruments, developing the intervention, and delineating data analysis procedures. In the AR DiP, she implemented a larger-scale intervention that included 22 teachers, 11 who indicated they were ‘more accomplished’ in using HHD during instruction and 11 who were ‘less capable.’ Again, she used the collaborative apprenticeship approach be developing a community of practice for the participants where they learned with and from others about using HHD during classroom instruction. She also provided professional development on using HHD for instruction; and she asked teachers to use HHD during instruction.

**Post graduate AR efforts.** The influence of AR on Inquiry as Practice has been shown to endure among graduates who continued their AR work and/or extended it to other PoP (Author, 2016b). In particular, the researchers found graduates of this CPED-guided program continued to engage in AR in their local contexts as they led, fostered innovation, and collaborated with their colleagues. For example, one graduate who teaches mathematics at a community college successfully used cooperative learning in her DiP. She continued those efforts and others saw the strong results she obtained. Now, as a result of her work, most of the mathematics faculty members now use cooperative learning to aid acquisition of understanding and retention of students. Another, who mentored alternatively certified teachers at her school using action research as a form of professional development has influenced her whole school campus as noted when she said, “Now, every … teacher on my campus engages in action research.” Thus, these results showed graduates had influenced and continued to influence their workplaces through their AR efforts.

**A Critique of Using Cycles of AR**

Cycles of AR as implemented in this EdD program have not been without limitations. In fact, three limitations have arisen as we implemented cycles of AR that warrant consideration. First, a very small number of students have ‘tunnel vision’ in which they became too narrowly focused on ‘their PoP.’ When this occurs, students may deem material that was not directly related to their PoP or its resolution as extraneous or irrelevant. As noted, this overly narrow focus by students occurs infrequently and has been remedied by individual consultation with the student.

Second, students have changed their PoP. Frequently, when this type of change occurs, students moved to a related PoP that allowed them to use their contextual setting, theoretical perspectives, and so on, which they had been using in earlier cycles. Of course, these students may not be able to engage in all the cycles of AR as they have been articulated, here. Nevertheless, they have typically engaged in the work of Cycles 1 and 2, and incorporated some of the work of other cycles, as they were able before they culminated their efforts with Cycle 3, the DiP.

Third, students have changed professional positions and this has prevented them from engaging in all the Cycles as described, above. In this situation, students have successfully used two types of strategies. The first has been a ‘compression strategy.’ In this process, students have conducted Cycles 0 and 1, for example in one semester. Another comprehension opportunity that has been used was compressing Cycles 2 and 2.5 into one semester. An alternative, second strategy, which has had a similar outcome and which has been used by students who were further along in the program has been the ‘blending strategy’ where students have executed Cycles 1 and 2 concurrently. Specifically, because they were more knowledgeable, they more carefully designed their instruments (Cycle 2) as they executed Cycle 1, the trial intervention, on their new PoP. Thus, although students may not have been able to conduct the cycles of AR as outlined in the time frames above, the cycles of AR framework has been sufficiently adaptable to allow students to make modifications in the cycles of AR, while they progress through the program in a timely way.

**Strengths of AR and Implications for Preparing Students’ Practice as Inquiry Orientation and Skills**

For the program at [name deleted for review], AR is a very powerful technique that fosters development of skills allowing students to effectively conduct Inquiry as Practice in their work settings. Several aspects of AR make it especially useful in developing an Inquiry as Practice orientation and requisite skills for students in an EdD program and bode well for its use in other programs. First, AR has some inherent characteristics that make it a potent technique that can be readily used by educational leaders and practitioners in their practices. Those characteristics include (a) adaptability to various contexts and PoP, (b) easing into AR over time, (c) developing systematic inquiry because of the elegant, four-step process in AR, and critically (d) sustainability of AR in educational practice settings after completing the program.

Second, AR can be scaffolded by faculty members to prepare EdD students to use it as they inquire into their practices during the program and beyond it. For example, the cycles of AR as articulated in this program provide students with a demanding, but supportive approach to learning AR and using it during inquiry into their practice. Specifically, by scaffolding the AR work to allow students to move from conceptualization, to reconnaissance, to a very small scale intervention, to modifying an intervention as warranted, to refining quantitative and qualitative instruments and procedures, and then to conducting a Dissertation in Practice, students are aided in applying AR processes to inquire into their practices during the program and following it.

Third, it is apparent in the descriptions about the cycles of AR that students are afforded opportunities to develop practice-appropriate Inquiry as Practice skills that are employed as they engage in transformative actions in their educational workplace settings. Additionally, it is evident that students’ inquiry is persistently connected to their daily practice, their Laboratories of Practice, throughout their coursework and during their Dissertations in Practice. Finally, although there are some limitations with respect to using cycles of AR as outlined in this essay, there is sufficient flexibility to accommodate students who change their PoP or their professional position.

Taken together, the arguments I offer here along with the data from several research studies suggest AR is highly effective for developing and sustaining Inquiry as Practice abilities among EdD students (Author, 2014; 2015; 2016b; in press; 2017a; 2017b). Specifically, it is clear these Inquiry as Practice abilities emerge during the program as students try them out in their Laboratories of Practice and become more adept at using them (Author, in press; 2017a). Importantly, these inquiry abilities are sufficiently durable that program graduates continue to employ them in their educational practice settings after they complete the program (Author, 2015; 2016b; 2017b).

References

\*—Indicates textbook used in the methods or methods-like courses in the program.

Author. (2014). Developing researching professionals in an EdD program: From learners and leaders to scholarly and influential practitioners. Journal article publication.

Author. (2015). Uncovering the identities of students and graduates in a CPED-influenced EdD program. Journal article publication.

Author. (2016a). Using action research to develop educational leaders and researchers. Book chapter publication.

Author. (2016b). *Realizing Shulman’s vision: Carnegie Project on the Education Doctorate affiliated program graduates influence professional practice*. Manuscript submitted for publication.

Author. (2016c). Becoming scholarly practitioners through cyclical engagement in the action research process. Paper presentation.

Author. (in press). Research becomes you: Cultivating EdD students’ identities as educational leaders and researchers and a “learning by doing” meta-study. Journal article publication.

Author. (2017a). *Developing EdD students’ identities as educational leaders and educational researchers II: Outcomes from a Carnegie-Project-on-the-Education-Doctorate program*. Manuscript in preparation.

Author. (2017b). *Educational learners, leaders, and researchers: Identity development of EdD students in a Carnegie-Project-on-the-Education-Doctorate program*. Manuscript in preparation.

\*Brinkmann, S., & Kvale, S. (2015). *InterViews: Learning the craft of qualitative research interviewing*. Thousand Oaks, CA: Sage.

\*Charmaz, K. (2014). *Constructing grounded theory* (2nd ed.). Thousand Oaks, CA: Sage.

CPED. (2009). CPED Principles. Retrieved from <https://c.ymcdn.com/sites/cpedinitiative.site->

ym.com/resource/resmgr/CPED\_Framework.pdf

CPED. (2010). CPED Design Concepts. Retrieved from

<https://c.ymcdn.com/sites/cpedinitiative.site-> ym.com/resource/resmgr/CPED\_Framework.pdf

\*Creswell, J. (2015). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (5th ed.). Boston, MA: Pearson.

Glazer, E., Hannafin, M. J., & Song, L. (2005). Promoting technology integration through

collaborative apprenticeships. *Educational Technology Research and Development, 53*(4), 57–67.

Glazer, E., & Hannafin, M. J. (2006). The collaborative apprenticeship model: Situated professional development within school settings. *Teaching and Teacher Education, 22*, 179–193.

\*Green, S. B., & Salkind, N. J. (2014). *Using SPSS for Windows and Macintosh: Analyzing and understanding data* (7th ed.). Boston, MA: Pearson.

Hall, G., & Hord, S. (2006). *Implementing change: Patterns, principles, and potholes* (2nd

ed*.*). Boston, MA: Allyn and Bacon.

\*Herr, K., & Anderson, G. L. (2015). *The action research dissertation* (2nd ed.). Thousand Oaks, CA: Sage.

\*HyperResearch. (2016). HyperRESEARCH 3.7.3. ResearchWare, Inc.

\*Ivankova, N. V. (2015). *Mixed methods applications in action research*. Thousand Oaks, CA: Sage.

Levine, A. (2005). *Educating school leaders*. Princeton: NJ: The Woodrow Wilson National Fellowship Foundation.

\*Mertler, C. A. (2017). *Action research: Improving schools and empowering educators* (5th ed.). Thousand Oaks, CA: Sage.

Mills, G. E. (2014). *Action research: A guide for the teacher researcher* (5th ed.). Boston, MA: Pearson.

\*Plano Clark, V. L., & Creswell, J. W. (2015). *Understanding research: A consumer’s guide*. Boston, MA: Pearson.

Shulman, L. S. (2005). Signature pedagogies in the professions. *Daedalus*, *134*(3), 52-59.

Shulman, L. S., Golde, C. M., Bueschel, A. C., & Garabedian, K. J. (2006). Reclaiming education's doctorates: A critique and a proposal. *Educational Researcher*, *35*(3), 25-32.

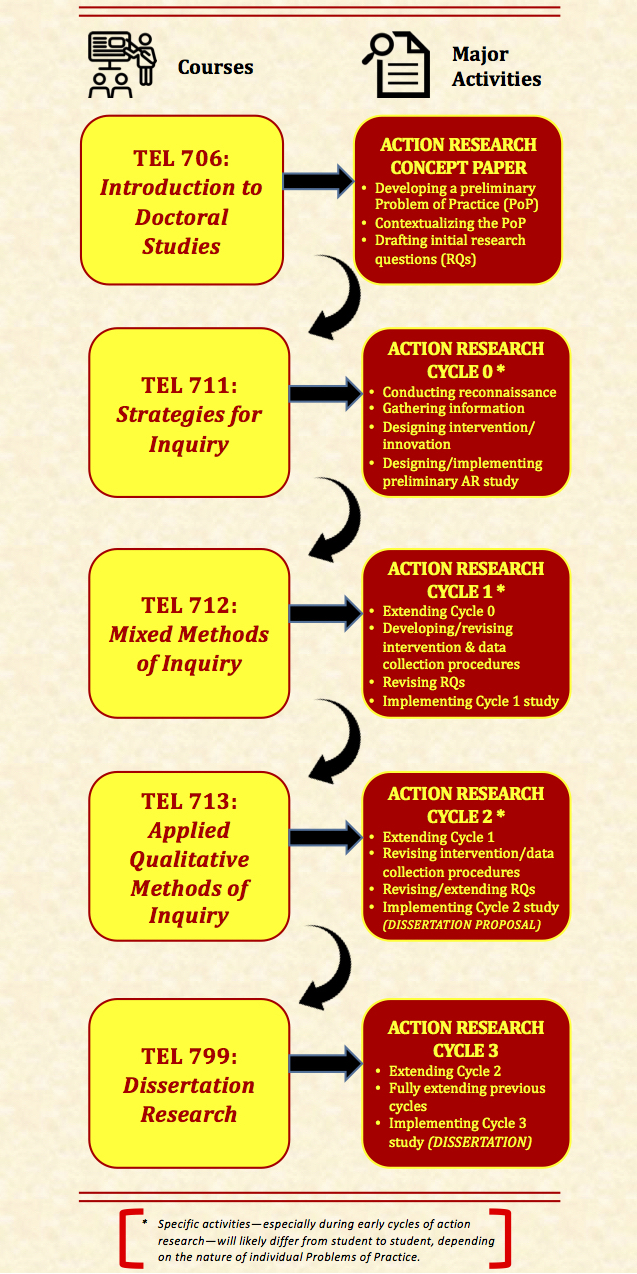
Wenger, E. (1998). *Communities of practice: Learning, meaning, and identity*. New York, NY: Cambridge University Press.

Wenger, E. McDermott, R., & Snyder, W. M. (2002). *Cultivating communities of practice*. Boston, MA: Harvard Business School Press.

Table 1

*Coursework, Inquiry Strategies, and Cycles of Action Research in the EdD Program at [name deleted for review]*.

|  |  |  |
| --- | --- | --- |
| **Term and Course(s)** | **Course Content to Develop Inquiry Skills** | **Action Research Activity** |
| Term 1  TEL 706—Introduction to Doctoral Studies | * Developing understanding of AR * Considering, articulating, and refining a Problem of Practice (PoP) * Writing Research Questions (RQs) * Identifying and considering initial research literature | Action Research Concept Paper   * Developing a preliminary PoP * Contextualizing the PoP * Drafting initial RQs |
| Term 2  TEL 711—Strategies for Inquiry | * Developing understanding of quantitative and qualitative (Q/Q) research * Developing background on theories (w/ 703) * Building skill reading the literature (w/ 707) * Designing an initial interview or survey * Writing about context, theories, related literature and initial methodology * Considering and developing an initial intervention/innovation | Action Research Cycle 0   * Conducting reconnaissance * Gathering information and writing it up   Action Research Foreshadowing Cycle 1   * Clarifying and writing about their context * Reviewing and writing about theoretical frameworks guiding the project * Designing initial intervention/innovation * Designing preliminary Action Research study |
| Term 3  TEL 712—Mixed Methods of Inquiry | * Developing mixed method research skills * Extending interviewing and survey skills * Developing initial qualitative analysis skills * Developing initial quantitative analysis skills using SPSS | Action Research Cycle 1   * Extending Cycle 0 * Developing/revising intervention and data collection procedures * Revising RQs * Implementing Cycle 1 study using a small scale intervention |
| Term 5  TEL 701—Applied Methods of Quantitative Inquiry  TEL 713—Applied Methods of Qualitative Inquiry | * Extending mixed method research skills * Extending interviewing and survey skills * Extending qualitative analysis skills * Extending quantitative analysis skills using SPSS * Learning to use qualitative analysis software (using HyperResearch) | Action Research Cycle 2   * Extending Cycle 1 or stepping to the side * Revising intervention and data collection procedures * Revising/extending RQs * Implementing Cycle 2 study |
| Term 6  TEL 792—Research in the Leader Scholar Community | * Extending mixed method research skills * Extending interviewing, survey, etc. skills * Extending qualitative analysis skills * Extending quantitative analysis skills | Action Research Cycle 2.5   * Extending Cycle 2 or stepping to the side * Revising intervention and data collection procedures * Revising/extending RQs * Implementing Cycle 2.5 study |
| Terms 7-8  TEL 799—Dissertation Research | * Applying mixed method research skills * Applying interviewing and survey skills * Applying qualitative analysis skills * Applying quantitative analysis skills | Action Research Cycle 3   * Extending Cycle 1, 2, and 2.5 * Fully extending previous cycles * Implementing Cycle 3 study—Dissertation in Practice |

*Figure 1*. Cycles of Action Research Throughout the Program

*Figure 2*. Representation of the Action Research Approach