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An Inquiry into Action Research: Teaching and Doing Action Research for the First-Time

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Teaching and Doing Action Research for the First Time

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This paper is a narrative of my inquiry into action research that I undertook while teaching two research methods courses within a graduate teacher education program in the northeast United States. I conducted this inquiry to be able to make research-based decisions about the value and rigor of action research. Understanding the value and rigor of action research was important for two reasons. First, as a first-time instructor of action research, I had to make sense out of this view of research. I was inclined to think that action research was the appropriate method of inquiry for classroom teachers, but I lacked the prior academic background to support my assumption. Second, I anticipated that I would be held accountable for employing action research against the established practice of teaching research methods in this university. The current practice of teaching research methods was based upon traditional qualitative and quantitative research paradigms. I, on the other hand, wanted to use action research as my approach to teaching research methods in this graduate degree program. I undertook this inquiry to test my assumptions about action research so that I would be able to make evidence-based claims about its value and rigor.

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I believed action research was a more appropriate method of inquiry for my group of students. My students were teachers who neither had the time nor the resources to conduct traditional research in contexts other than their own classrooms. They were pursuing graduate degrees above and beyond their full-time employment. The focus of this degree program is to equip teachers with the design and development of instructional materials rather than on measurement and evaluation. Given this background of my students and the degree program, I believed I could achieve the objective of the course—teaching the research process—by having teachers design and conduct inquiries unique to their individual needs. I did not wish to model the "objective" approach to teaching research by only scratching the surface of traditional research methods and having teachers produce research projects that were far removed from the demands of classroom teaching. I was determined to make the research process relevant and meaningful to teachers.

I chose action research, as opposed to the traditional methods of inquiry, to teach the research methods courses in this graduate degree program designed for classroom teachers. On the downside, I had no formal background to be able to make a claim about its rigor and value for practitioners. Action research was not valued in the institution where I worked. The Institute Research Board (IRB) took the approach that action research was not rigorous enough to be considered "research," based on the definition of research by the U.S. federal government. This view is often echoed in the realm of the higher education research community at large. Action research has the reputation for lacking rigorous research standards (Zeichner & Noffke, 2001). Thus, I had found myself confronting a personal dilemma, or what Whitehead might have called a "living contradiction" (Whitehead & McNiff, 2006). How successful would I be in modeling the rigorous research process through action research, which was neither held up against the academic research standards nor part of my prior background? Would I need to compromise on the quality of research? How would I ensure that I met the expected research methods course outcomes for which I was accountable? Does action research really do what it means to do: seek action and research outcomes at the same time (Dick, 1999)? I was inspired to know more about the effectiveness of my practice and the value of the action research.

Context

I taught two 3-credit-hour research methods courses over two semesters to a total of 37 K-12 public school teachers at two different locations. Table 1 presents the demographics of the teachers with whom I collaborated in this inquiry.

Table 1

Student Demographics at Site 1 and Site 2

		Grade				Research experience	
Location	Number	Elem	Middle	High	Content area	Yes	No
Site1: Suburban, near a major metropolitan city	12	4	6	2	Science Math Physical education Vocational English / language arts	3	9
Site 2: Suburban, about 70 miles away from a major metropolitan city	25	10	9	6	Science Math Technology Foreign language Physical education English / language arts	3	23

In my first class meeting with my students, teachers expressed anxiety about having to undertake a research project in order to be able to earn their graduate degrees. I explained that they were to undertake an action research study instead of a traditional research study. I contrasted action research to traditional research from the point of view of (a) the person—the practitioner as opposed to an outside researcher—doing the research, and (b) the trajectory—cyclical as opposed to hierarchical. I maintained that their action research studies were likely to use mixed methods, but would have to be done by themselves in collaboration with others. I was hoping that teachers would welcome the idea of having to conduct research studies about their own practices within their classrooms as opposed to doing it elsewhere. To my surprise, this was not the case. Most teachers were not familiar with action research. Some had heard of it, but did not think it was rigorous enough to pursue in a graduate program. Here are some examples of my students' posts to the first week's electronic discussions on action research: "How could action research be considered *research* if it involves *one's own practice* evaluated by the practitioners themselves?" "I am a reflective teacher and always self-evaluate my teaching practice; so, how is it different from what I typically do?" "Are we then all action researchers and do action research everyday?" "If there is not a control group, how would I know I proved something?"

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I was puzzled with my students' initial reactions to action research. I soon realized that their concept of research had involved "scientists" conducting research in lab settings and two groups of subjects to compare the results of an experiment. My students' views of what constituted research led me to incorporate further readings and discussion topics around these key questions: (a) What is research? (b) What is action research? (c) How is action research different from traditional research? and (d) Why are we doing action research? We returned to these discussion topics throughout the two semesters from time to time. Through readings, reflection, collaboration, and making observations, the nature of the discussions and student attitudes shifted. Teachers themselves eventually became advocates of action research as they saw the evidence of doing research on their practices.

Conceptual Framework

I used the self-study approach to action research. McNiff and Whitehead argue that action research is a form of inquiry that enables practitioners to investigate and evaluate their own work (McNiff & Whitehead, 2006;Whitehead, 2012). The three interrelated educational theories that underpinned my action (instruction) and research were: (a) the theory of educating (Gowin, 1981; Gowin & Alvarez, 2005); (b) the theory of education (Novak, 1998; Novak & Gowin, 1984); and (c) the theory of meaningful learning and retention (Ausubel, 2000). Concept formation constitutes an important aspect of Ausubel's theory of meaningful learning. The learner integrates the new and old information and forms a new composite of propositions between the new and old information. Although the learner must choose to do this, instructors

can encourage acquisition and retention of new knowledge by using thinking tools such as concept maps and Vee diagramming.

Overcoming Uncertainties

In the planning phase, I grappled with a variety of approaches to doing action research. I reviewed the literature and examined action research course syllabi on the web. Ironically, this process left me with more questions than answers. I then decided to seek help from leaders of action research to obtain some clarity about the variety of models of conducting action research. The American Educational Research Association (AERA) meetings gave me the opportunity to collaborate with other action researchers. In one AERA meeting, I met with Michael Brody, the former chair of the AERA's Action Research Special Interest Group (SIG), and asked him to mentor me in the process of designing my courses. He shared his course syllabi and materials with me. Also, I met with Marino Alvarez, the co-author of *The Art of Educating with V Diagrams* (Gowin & Alvarez, 2005) to hear his approach to teaching action research. Additionally, I took a professional development course delivered by McNiff and Whitehead.

Out of these networks, collaborations, and training, I directed my attention to reading certain literature. At the same time, I decided to allow varying approaches to action research to play their roles. I selected two textbooks (McNiff, Lomax, & Whitehead, 2003; Mills, 2007) with two different approaches to action research. Differences in these texts fueled strong student opinions in our in-class and electronic discussions. Some students expressed discomfort with the idea of social change in one of the texts, but felt comfortable with the prescriptive approach to action research in the other text. I welcomed the variety of student opinions and advised them to revisit their assumptions at the end of the course.

Ultimately, I conducted my own action research study to make claims about the rigor and value of action research. Therefore, my focus was not to determine the "right" way of doing action research, but to determine how successful I would be in modeling the research process without compromising in rigor. What could I say to those who did not think action research could match the standards of traditional research? How about the value of action research? Does it allow teachers to make research-based decisions within their practices? As an attempt to find answers to my own questions, I planned my own action research and conducted the current inquiry. Table 2 presents the research questions, data sources, and data analysis of this inquiry.

Table 2

Triangulation Matrix

Research question	Data sources	Data analysis criteria
RQ1: What can I claim about the rigor of action research?	Final project report End-of-the-course survey Research journal	Analysis of the final projects: (a) *context*—school, students, and teacher (b) *research design*—focus,

	Electronic discussion Student collaborators A critical friend	rationale, research questions (c) *methodology*—data sources, procedures, criteria for data analysis, and collaborators (d) *conceptual theoretical framework*—a concept map that is aligned with the concepts identified in the theoretical framework (e) *knowledge claims*—each research question is answered, supported, and transformed
RQ2: What can I claim about the value of action research?	Final project report End-of-the-course survey Research journal Electronic discussion Student collaborators A critical friend	Changes teachers stated to have made in their practices (placed under one the three general categories): • Changes in teachers • Changes in learners • Other changes

Thinking and Doing Action Research: Three Maps and Two Strategies

To understand and communicate our inquiries, we used three maps: concept mapping, Vee diagramming, and the Project Evaluation Rubric; and two strategies: self-reflection and collaboration. Each of these tools and strategies was indispensable and served us a great deal at different stages of action research.

Informed by Novak's theory of conceptual education (1998), we first created our individual concept maps. The concept map was a thinking tool, whose purpose was to help one externalize the key ideas, hierarchy, and relationships in order to display the meaning an individual has for a given domain. Our domain was action research, and thus, each of our concept maps captured the meaning we placed in our action research inquiries. Next, we produced the Vee diagram to understand and communicate the structure of knowledge construction both in the thinking (conceptually) and doing (methodologically). The Vee took its name from its shape (V). The bottom of the Vee pointed to a phenomenon we tried to understand. At the center of the Vee laid our research questions. Moving to the left was our thinking (conceptual/theoretical framework) and to the right was our doing (methodology). The basic assumption behind the Vee was that how we see the world depended on how we individually constructed our vision (Gowin, 1981). We produced our concept maps using the online Cmap tool (http://cmap.ihmc.us/), and created the Vee using the Vee template (Appendix B).

I created the Action Research Concept Map (Appendix A) and the Vee Diagram (Appendix B) in the course planning stage before meeting my students in the classroom. The concept map

captured my thinking of action research in a single image, which defined the phenomenon in words and showed the hierarchy as well as the relationships between and among concepts. Given the variety of approaches to action research at large and the unjustified lack of respect toward action research in my institution, I was compelled to make my practice of action research explicit. The Action Research Concept Map "operationally defined" what I meant by teaching and doing action research. Next, I moved on to creating the Vee Diagram to uncover my "world view, philosophy, theory, principles, constructs, and concepts" in relation to my specific inquiry: understanding the rigor and value of action research. Given the two sides of the Vee—thinking and doing—I could only complete the thinking side of the diagram in the course planning phase. I produced my Vee Diagram in its current form upon collecting and analyzing data from my practice at the end. In summary, the concept map and the Vee Diagram went through much iteration. Although the concept map was in its current form when I began teaching action research, the Vee Diagram evolved and expanded over time only to be completed at the end. Both maps complemented one another: the concept map operationally defined what was meant by doing action research, and the Vee Diagram communicated the complete life cycle of my own inquiry into action research both in the thinking and doing phases.

The Project Evaluation Rubric (Appendix C) was the third map I produced upon completing the first iterations of the concept map and the Vee Diagram. In the Action Research Concept Map, I had already operationally defined my practice of action research being built around these five concepts: (a) context, (b) research design, (c) theoretical framework, (d) research methods, and (e) research results. The Context was the unique identifier of action research where our inquiries started and ended. In my concept map, I had placed Context on the top to distinguish action research from other approaches to research. The Action Research Concept Map also identified the other four—Research Design, Theoretical Framework, Research Methods, and Research Results—as common threads to all research. The Project Evaluation Rubric took these five major components from my concept map and quantified them in a scale, ranging from 1 (poor) to 3 (excellent). I used the Project Evaluation Rubric to assess student action research projects and had my students use it for self-evaluation.

Action research was a self-reflective process, but was always done in collaboration with others—our students, peers, administrators, and other stakeholders. Internally, we sought self-reflection by keeping a research log to record our experiences in carrying out our inquiries. Externally, we sought to self-reflect with the help of our collaborators. I involved all of my students and informed them that I was learning the process of action research just as they were. Further, I invited my dean, Dr. Michael Uttendorfer, to observe several of classes and sought his feedback as one of my collaborators representing the administrator perspective. In class, my students worked in their small peer groups made up of three to five individuals. Out of class, they continued to collaborate with their peers via the online electronic discussion board. They adopted a critical friend from their schools to discuss and share their efforts of action research. They also enlisted an administrator in addition to the three critical friends (two peers from the course and one peer from their schools). In sum, we accomplished our inquiries by reflecting on our practices individually and collaboratively in and out of class with those people who represented different perspectives.

Challenges

The process of filing the research proposals with the IRB presented itself as a major challenge. This challenge was not due to the fact that we—my students and I—were neglectful to be accounting for research ethics in our research projects. It was rather due to the fact that what we and the IRB counted as research meant different things.

In the direction of the university IRB guidelines, I had my students prepare the following four documents: (a) a permission letter from the school where the research took place; (b) a copy of a consent letter from parents; (c) a detailed description of the research design, implementation, and analysis; and (d) copies of data sources. I spent a significant amount of classroom time helping teachers prepare these documents. My students devoted more time and effort in preparing and waiting to receive permission letters from their schools. However, the process of getting our research proposals filed and reviewed by the IRB left us puzzled. The IRB protocols directed us to describe our cyclical, context-specific research according to the standards of the traditional, hierarchical research conducted elsewhere. We were asked to describe our "hypothesis" and "research subjects" and provide final copies of our data sources. However, we were not testing a hypothesis; we were both teachers and researchers, and our research questions and instruments evolved over time through the cycles of our reflections and actions. Nevertheless, we completed our research proposals using the format for traditional research and filed our proposals with the IRB committee. Upon reviewing our files (37 from my students and 1 from myself), in a letter addressed to me, the IRB expressed that our research proposals did not hold up to the research standards defined by the federal government. They further questioned our data collection methods, as they believed these were "common teaching practices." Clearly, the IRB committee failed to acknowledge the flexibility of action research and its reliance on common sense classroom practices conducted by a practitioner who is both a researcher and researched.

Rigor and Value of Action Research

As a first-time instructor of action research, I conducted this inquiry to test my assumptions about the rigor and value of action research. By rigor, I meant that action research, similar to all other genres of research, uses the scientific method of inquiry—the process of asking questions, collecting data, and performing analysis—and produces evidence-based results. By value, I wanted to understand if action research does what it is supposed to do: produce both research and action outcomes at the same time.

I used my students' project write-ups as a starting point to understand the rigor of action research, whether or not the process of action research echoed the scientific method of inquiry. Table C displays my ratings of teacher-researchers' write-ups using the Project Evaluation Rubric. I compared my ratings to the self-report data in the End-of-the-Course Survey and teacher self-reflections in the research journals and electronic discussions. My rating of the teacher-researcher reports revealed over 90% had explained their inquiries well in terms of the standards of all research that are common to all: asking questions, collecting data, analyzing data, and making claims based on the evidence. My ratings of the teachers' projects were parallel to what the teachers self-reported in the End-of-the-Course-Survey. Of the 37, 34 (92%) stated

that their knowledge about the research process increased a great deal. Teachers expressed both amazement and relief that they conducted original research in their classrooms and felt confident that teachers, as scientists, produced research-based results.

By going through this process, they gained evidence-based knowledge on what is important and what is to be understood about teaching and learning within their classrooms.

The second research question involved the value of action research: whether or not the action research process yielded both research and action outcomes at the same time. I conducted content analysis of the teacher-researchers' reports to gather "what had changed in their practices." I recorded the statements about changes in teachers' practices in a spreadsheet using exactly the same phrases teachers had used. I counted a total of 25 different changes ranging between 3 and 17 for each teacher, with an average of 9 for most teachers. Table 4 represents the sum of the changes the teachers made or observed in their practices under one of these three categories: (a) changes in teaching, (b) changes in learning, and (c) other changes that are not related to teaching and learning.

Most teachers noted that the action research process improved their teaching practices. By going through this process, they gained evidence-based knowledge on what is important and what is to be understood about teaching and learning within their classrooms. For example, one physical education teacher examined increasing students' cardiovascular endurance using pedometers and interactive websites. A foreign language teacher identified the problematic area of conjugating verbs in teaching Spanish and wondered if the interactive white board technology that was recently installed in her classroom would help increase her student performance in Spanish. A math teacher concerned about family involvement examined if an interactive class website would help change student work habits and increase student academic performance. Another math teacher was concerned about her use of a constructivist approach in helping her students with the transfer of math problem-solving skills to real world situations. To facilitate student transfer of knowledge, this teacher "scrutinized" her constructivist approach by videotaping her classroom and discussing the tapes later with her critical friend in the school. An English / language arts teacher took the challenge to reconcile her dissatisfactory experience with a teaching strategy of "literature circles" against its potential benefits. This teacher systematically investigated and evaluated key issues related to her dissatisfaction with literature circles in her practice. She videotaped her classroom and monitored problematic areas such the quality of student literature circle discussions with her students.

Table 3

The Rigor of the Research Process Ratings

Criteria		3* (Excellent)	2* (Good)	1* (Poor)
Context	School	35	2	0
	Classroom/students	34	2	1

	Teacher	30	3	4
Research design	Research focus	36	1	0
	Research rationale (value)	34	3	0
	Research questions	34	3	0
Conceptual framework	Literature review	23	13	1
	A concept map	33	4	0
Methodology	Data sources	33	3	1
	Procedures of data Collection	31	5	1
	Criteria for data analysis	28	7	2
	Collaborators	30	4	3
Knowledge claims	Each RQ is answered	22	14	1
	Data transformations made	25	12	0
Value claims	Teacher	33	4	0
	Learner	32	5	0
	Curriculum	29	4	4
	Governance	28	3	6

Note. 1=Criterion is either missing or not clearly explained; 2 = Criterion is present, but is not supported; 3 = Criterion is present, clear, easy to follow, well developed and supported.

The process of conducting their self-inquiries gave teachers the means to systematically evaluate the complexities of their profession: how they teach (their teaching approaches, teaching materials, and technologies) and what they teach (focusing on clearly identified content). Indeed, most teachers (*n*=22) used the phrase "becoming better teachers" in their own self-reflections.

Table 4

Meaning of Action Research

Changes in teachers and teaching	Sum
Self-evaluating the value of tools they use in classroom	26
Identification of the next cycle / future action research topic	26
Making changes in instructional strategies	24
Becoming reflective / better teachers	22
Self-evaluation of teaching and teachers themselves	22
Self-evaluation of curriculum and teaching material	17
Differentiating instruction	12
Increasing teacher motivation	8

Increasing teacher confidence	4
Changes in learners and learning	**Sum**
Increasing student motivation	20
Creating independent learners	12
Observing students to become active learners	12
Observing students to see their work in progress and in action	11
Improving student grades	10
Improving student habits, such as attendance or tardiness	6
Increasing students' participation or on-task behavior	7
Connecting classroom learning to real world situations	4
Increasing students' collaboration	4
Other changes	**Sum**
Increasing collaboration or collegial discussions with other teachers	10
Increasing administrators' interest and involvement	10
Making recommendations to affect school-wide changes	9
Increasing parental involvement	5
Becoming action research advocates in their schools	4
Increasing communication facilitated via technology	3

The End-of-the-Course Survey sheds light on the numbers displayed in Table 4. The following quotes express how teachers have come to understand action research as a method of inquiry toward improving teaching and learning outcomes:

- I used to think that you had to be a *scientist* to do research, but action research is great for teachers to keep a fresh look in teaching.
- I learned that research could be practical and specific to teachers' needs.
- I am now capable of looking at what I teach, evaluate, and evolve.
- I learned to ask questions that will affect the outcome of teaching.
- Hello action research! More of this I think I will do.
- I learned to look at my work in a methodical way and make changes accordingly.
- I learned a tremendous amount. I found myself examining all my assessments in a new way.
- I became much more aware of the research process and have an understanding now that someday (when I recover from this one) I will conduct another one.
- I will now try new things. I am going to work to teach my students and not worry so much about the mandates.
- I can't believe that I actually did it … that I had research going on in my classroom. I feel that now that I've done it once I want to do it again because from what I know it can be better.

These quotes are samples of teacher testimonials pointing to the evidence of their professional growth and change. The majority had gone through some transformation that they had doubted at first. Closing this loop required a tremendous amount of work and sometimes going against their pre-existing beliefs and misconceptions. At the end, they felt like they had now cleared the way, and they were now ready to do it again. They felt this was a worthwhile process because it allowed them to describe their practices confidently and scientifically in light of evidence.

Discussion

The following summary represents my own transformation as an instructor of action research. I made these explanations based on the framework of four commonplaces of education (Schwab, 1973): teaching, learning, curriculum, and governance. As Schwab intended, I used this framework to make sense of the educational intervention—action research—that I employed within this graduate degree teacher education program. I used the framework of four commonplaces to take a broader look at the results of inquiry and express them in terms of teaching, learning, the curriculum, and governance.

Teaching: Teaching and doing action research for the first time shifted my own perspective of research in education. At first, I grappled with the different orientations of doing action research. Putting myself at the center of my own research and narrating my research report using the first person singular pronoun, "I," moved my knowledge base into an unknown terrain. At the end, I now know that traditional views of research fail to see that practitioners are also able to create new knowledge specific to their unique contexts. The messy nature of teacher practice, coupled with diversity of contexts under which teachers operate day to day, makes action research a more appropriate approach to research. How do we then claim that this "more appropriate approach to research for practitioners" is as rigorous as the traditional research? I now know action research uses the method of scientific inquiry as other research does, but differs from most others due to its cyclical and collaborative nature. Although some may disagree with the idea of a practitioner also acting as a researcher, this alliance does not necessarily mean compromise in rigor. I have come to understand that *action research is as rigorous as the improvements teachers make in their practices and in their social contexts*. I do not think the traditional approaches to research can make this claim, since they do not necessarily view teachers as agents of change who can make or fail to make evidence-based decisions that improve student-learning outcomes. Last but not the least, conducting my action research inquiry gave me the opportunity to examine both my professional learning and learning of my students. As with others (Walton, 2011) who examined one's own practice, I believe this professional learning in and of itself was meaningful.

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Learning: My examination of the teacher-researchers' projects, teacher self-reflections, and peer-group discussions revealed that the action research process led teachers to consider various teaching strategies, and allowed them to focus on both what they do and how they do in the

classroom. Simply put by two-thirds of the teachers (see Table 4), the process made them "better teachers." They tried out new strategies to research their students and parents, and gained a whole new insight into assessing student performance. They saw the value of action research and realized that they were capable of creating new knowledge based on evidence and systematic examination of their own practices.

More specifically, teachers as researchers expressed that the thinking tools (the concept mapping and Vee diagramming) and strategies (reflection and collaboration) helped them untangle the complexities of doing and communicating their inquiries. Concept mapping and Vee diagramming captivated teachers' thinking about their own practices, both at the fundamental, practical level and at a more global, philosophical level. Never before had they been prompted to think about their practices in a way scientists think of their experiments in terms of theories, concepts, constructs, principles, and sources of data. Never before had they thought these thinking tools—borrowed from science education—could be used to help them interrelate their practices both conceptually and methodologically in a balanced way. Equally important was self-reflection and collaboration. If the thinking tools had not been used collaboratively, they were likely to have little or no impact on teachers' practices. Their collaborative efforts gave them the means to discuss their ongoing classroom research with their peers, students, and critical friends. In light of their reflections with the help of their collaborators, teacher-researchers observed their classroom decisions and actions both internally and externally, incorporating as many perspectives as possible, including their students, colleagues, peers, administrators, and myself as an instructor. In the end, as stated by one of the teacher-researchers, they "learned to ask questions that would affect the outcome of teaching" and learned to seek answers to these questions more systematically to provide evidence for their actions.

Governance: Nolen and Putten (2007) eloquently describe the gaps in ethical principles and practices between *action research* and what is defined as *research* by the Institutional Review Boards (IRBs), which are guided by the principles of the Belmont Report created by the National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research. Filing the IRB proposals for a review was a striking governing influence in my teaching and doing action research. Despite our best attempts to comply with the research ethics, the IRB failed to acknowledge our action research studies as "research." The IRB could not reconcile the differences between action research and other traditional approaches to research. As action researchers, we had no statements of hypothesis; we were both teachers and researchers, and our research questions and instruments evolved over time as we learned more about our practices through the cycles of our reflections and actions. I believe I am not alone arguing that the question of research ethics needs to be redefined for action researchers at large in a way to be in sync with our changing worldviews about research. We will soon be able to reach this goal as more of us—both practitioners and faculty—do and disseminate research that was conducted on ourselves in collaboration with others for personal and professional growth.

Curriculum: The rationale behind conducting this inquiry into action research was to hold myself accountable for what I was expected to teach: the research process as it was described in the course standards and in the university course catalogue. I had made a shift in the way research methods were taught in my institution by adopting action research as my teaching approach to research. In an attempt to provide evidence for this new way of teaching of research methods

without a compromise in rigor, I found myself conducting my own inquiry into action research. I thus systematically examined and documented how I taught the research process to this group of teacher-researchers. My action research put me on the same platform as my students; we all became learners and teachers of our curricula.

Value Claims

At the onset of our action research studies, we read that action research is a form of personal inquiry, but also something that is always done collaboratively with others to improve social situations within which teachers' practices take place (McNiff, Lomax, & Whitehead, 2003). The idea of "social change" appeared to us repeatedly throughout our readings of this text and other related materials. Although we were ready to welcome the idea of "personal change" as a result of our inquiries, we, including myself, were skeptics of social change within our contexts. While doing action research, we had many debates about the issue in and out of class. In the concluding paragraphs of their project write-ups, most teachers expressed their unexpected results: increased collaboration as well as collegial dialogue with their peers and administrators in their schools. Some teachers identified colleagues and administrators with whom they planned to conduct the next cycle of action research in light of what they had learned from their current studies. Others proudly noted their administrators' support, involvement, and interest in their action research studies and noted how this teacher-administrator collaboration led to further changes in their contexts. Some teachers found themselves assuming leadership positions, coaching other teachers in their pursuits of action research at their schools. One teacher was approached by the Board of Education to help integrate the new online learning management system to the entire district. This teacher-researcher noted that his study had an influencing effect in the decision-making process that affected the entire school district. Some teachers were asked to model the action research process to other teachers at their schools, or in few cases to a larger group of teachers in their school districts. Many expressed interest in dissemination of their studies. One teacher researcher pursued her interest and became the first teacher in her district to publish her action research (Brennan-Juana & Palak, 2011). In my own case, I opened the discussion in this institution that there were other ways of doing research that was more appropriate for classroom teachers. With this challenge came the opportunity to engage in a dialogue to better understand each other's perspective.

So, what is the value of this study? As with others (Cochran-Smith & Lytle, 2009; Whitehead, 2012), I believe action places self-reflection and collaboration at the center of the inquiry, takes a nontraditional approach to validity and reliability, and blurs the difference between the researcher and researched. I learned that action research is a legitimate and appropriate way of doing research for teachers who are concerned with making better sense of their professional lives. It is as rigorous and meaningful as the improvements teachers make in their teaching practices. We all adjusted our views about teaching and research, and experienced the transition of research into our practices first-hand. The research process had also influenced our relationships with our students, administrators, and colleagues within our social settings, and perhaps improved the society at large since we tried to be the best we could be in our professions.

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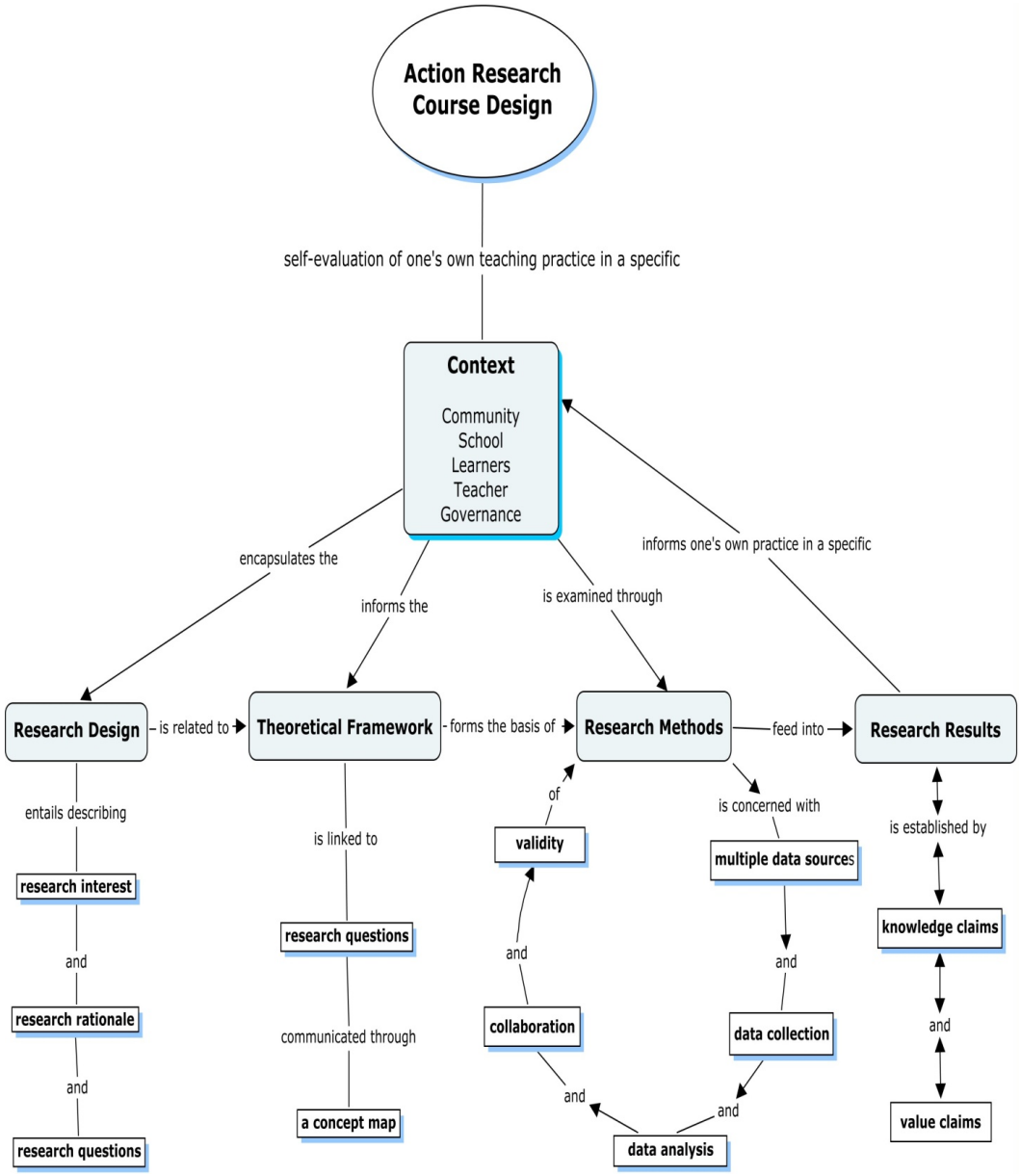
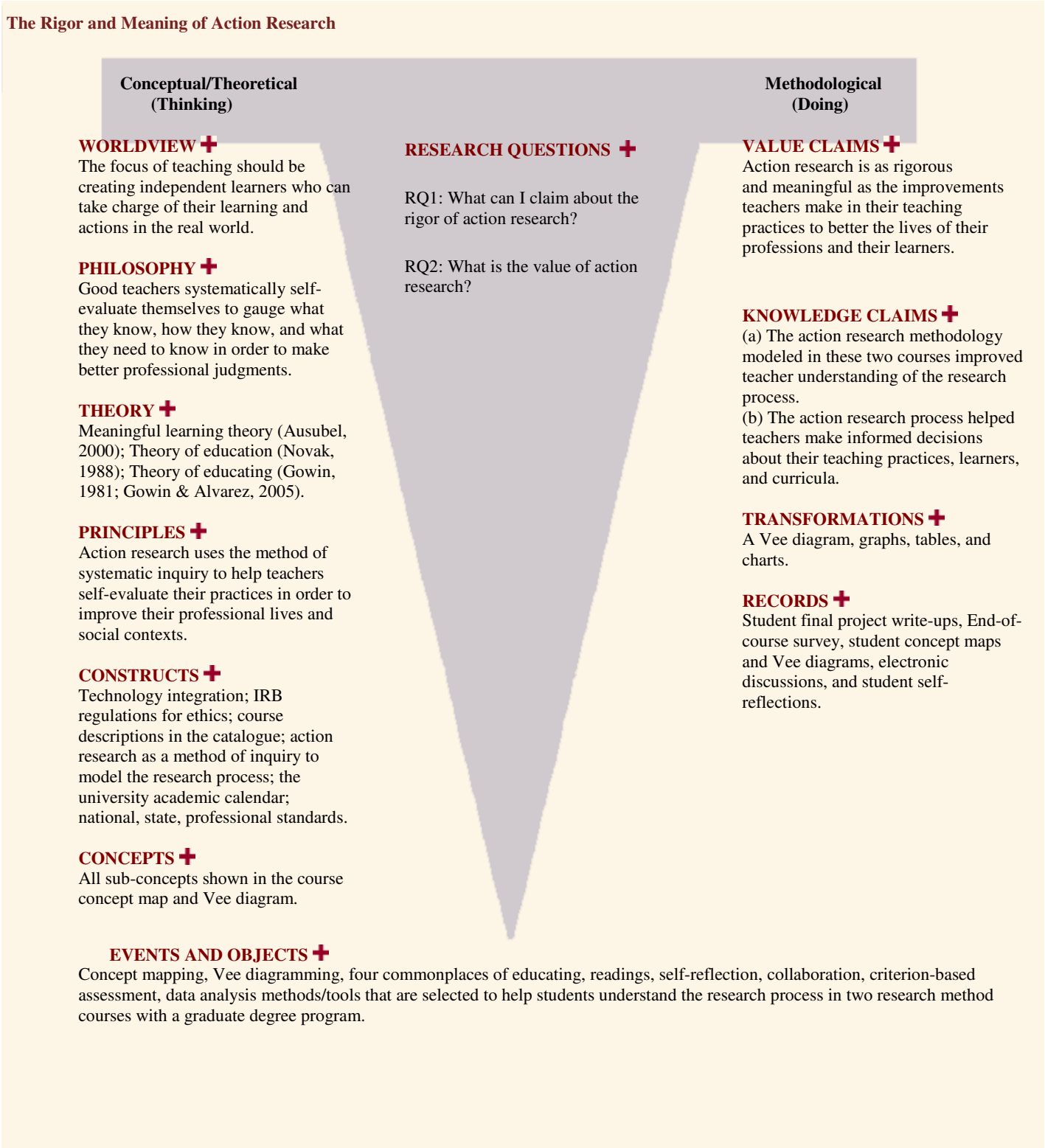
Appendix A

The concept map of the action research process in the course



Appendix B

The Vee diagram of the action research study



Appendix C

The Action Research Project Evaluation Rubric

INTRODUCTION	***Excellent***	***Good***	***Needs Improvement***	***Poor***
Context	The context—community, school, classroom, students—are explained well and supported with background data.	One contextual descriptor is missing OR all present but lack background data.	Two contextual descriptors are missing.	The context is not well explained at all.
Research Design	Research focus/interest, rationale/value, and research questions are clearly stated.	One of the descriptors of the research design is missing OR it is not explained well.	Two descriptors of the research design are missing OR are not explained well.	The research design in terms of focus, value, and purpose is extremely weak.

BODY	***Excellent***	***Good***	***Needs Improvement***	***Poor***
Methodology	Data sources, procedures for data collection, criteria for data analysis, and research collaborators are explained for each research question.	One of the descriptors of the research method is missing OR it is not explained well.	Two of the descriptors of the research method are missing OR are not explained well.	The methodology is poorly designed.
Conceptual/ Theoretical Framework	The conceptual framework is clearly related to research questions, supported with a review of the literature and communicated through a concept map.	One of the descriptors of the conceptual framework is missing OR it is not explained well.	Two of the descriptors of the conceptual framework are missing OR are not explained well.	The conceptual framework has little or nothing to do with the study design.

RESULTS	***Excellent***	***Good***	***Needs Improvement***	***Poor***
Results	Data collection and analysis strategies are explained and data transformations are made in answering each of the research	One of the descriptors of the Results section is missing OR is not explained well.	Two of the descriptors of the Results section are missing OR are not	Results are not clear and research questions are not answered well.

	questions.		explained well.	
Conclusions	Results are explained in terms of the four commonplaces of education: teacher, student, curriculum, and governance.	One of the descriptors of the conclusion is missing OR is not explained well.	Two descriptors of the conclusion are missing OR are not explained well	Conclusions are not based on the four commonplaces of education.
Implications	Value claims are made in the context of original problem and based on results; modifications of current practice are explained; future research ideas are stated.	One of the descriptors of the implications is missing OR is not explained well.	Two of the descriptors of the implications are missing OR are not explained well	Implications are not made clearly.

WRITE-UP	***Excellent***	***Good***	***Needs Improvement***	***Poor***
Contents	The write-up includes a cover page, an abstract, table of contents, tables, appendices, and references in a single file.	The write-up includes all the required content, but was submitted in multiple files.	The write-up is one file but has at least one of the required contents missing.	The write-up is submitted in multiple files with multiple missing files.
Organization, Writing, & APA Style	The paper is written well in terms of paragraph formation, grammar, spelling, and use of APA style.	The paper is written well, but it fails to use the APA style consistently and correctly.	The paper quality is below the average in terms of organization, mechanics, and the use of APA style.	The paper quality is weak in terms of organization, mechanics, and APA style.