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Action Research

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Action Research

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*J. SPENCER CLARK, SUZANNE PORATH,
JULIE THIELE, AND MORGAN JOBE*

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Action research is a common journey for graduate students in education and other human science fields. This book attempts to meet the needs of graduate students, in-service teachers, and any other educators interested in action research and/or self-study. The chapters of this book draw on our collective experiences as educators in a variety of educational contexts, and our roles guiding educator/researchers in various settings. All of our experiences have enabled us to question and refine our own understanding of action research as a process and means for pedagogical improvement.

The primary purpose of this book is to offer clear steps and practical guidance to those who intend to carry out action research for the first time. As educators begin their action research journey, we feel it is vital to pose four questions:

- What is action research, and how is it distinct from other educational research?
- When is it appropriate for an educator to conduct an action research project in their context?
- How does an educator conduct an action research project?
- What does an educator do with the data once the action research project has been conducted?

We have attempted to address all four questions in the chapters of this book. However, to preempt these four questions, it might be appropriate to consider why an educator would undertake an action research project.

We approach the purpose of action research from a critical and reflective practitioner standpoint. Engaging in action research sparks evaluation and reflection to address and implement necessary changes in practice, for both an individual educator and collaboratively within an institution. Conducting action research helps educators make changes in practice with increased

knowledge and confidence. Conducting action research can be especially important for educators as they face new initiatives from state departments, district offices, or their own administrators as they have to make decisions among considering their personal viewpoints, doubts, and dilemmas. Action research helps educators explore new initiatives, or even strategies, with an openness to learning, evaluating, and reflecting. Frequent self-evaluating and reflecting are vital acts in an applied field like education because it helps educators achieve professional agency and accountability.

Our book addresses the needs of two distinct groups of educator/researchers, who are at different points in their careers:

Current, in-service, educators who want to conduct small-scale research into an aspect of their current or future practice. Our book would provide these educators guidance regarding the processes involved in conducting an action research project. Our book will also help educators approach the issues in depth by demonstrating how to collect and analyze the data to implement new ideas or change their practices.

Students – both undergraduate and graduate who want to conduct research as part of their program courses. Most graduate programs – especially masters degrees – in education require action research as part of their program of study, which often means the students are also in-service educators from the first category.

We are hopeful that all educators will find the guidance provided in our book useful in improving and fine-tuning their practice. We believe that conducting action research is rooted in ones' sincere interest to develop their own knowledge by asking questions, engaging in inquiry, observing, listening, and analyzing for the purpose of constructing new knowledge. Therefore, we want to aid educators in the creation of new knowledge and experiences to inform their future professional learning and agency. Working alongside educators who engaged in action research in various educational contexts has provided us with a great deal of

encouragement and insights. We hope you will benefit from what we have experienced by utilizing this book.

About the Authors

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J. Spencer Clark is an Associate Professor of Curriculum Studies at Kansas State University. He has used action research methodology for the past 17 years, in K-12 schools and higher education. More recently, for the past 10 years he has taught action research methods to teachers in graduate and licensure degree programs. He also has led secondary student action research projects in Indiana, Utah, and Kansas. Clark also utilizes action research methodology in his own research. Much of his research has focused on understanding and developing teacher agency through clinical and professional learning experiences that utilize aspects of digital communication, inquiry, collaboration, and personalized learning. He has published in a variety of journals and edited books on teacher education, technology, inquiry-based learning, and curriculum development.

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I. What is Action Research for Classroom Teachers?

ESSENTIAL QUESTIONS

- What is the nature of action research?
- How does action research develop in the classroom?
- What models of action research work best for your classroom?
- What are the epistemological, ontological, theoretical underpinnings of action research?

Educational research provides a vast landscape of knowledge on topics related to teaching and learning, curriculum and assessment, students' cognitive and affective needs, cultural and socio-economic factors of schools, and many other factors considered viable to improving schools. Educational stakeholders rely on research to make informed decisions that ultimately affect the quality of schooling for their students. Accordingly, the purpose of educational research is to engage in disciplined inquiry to generate knowledge on topics significant to the students, teachers, administrators, schools, and other educational stakeholders. Just as the topics of educational research vary, so do the approaches to conducting educational research in the classroom. Your approach to research will be shaped by your context, your professional identity, and paradigm (set of beliefs and assumptions that guide

your inquiry). These will all be key factors in how you generate knowledge related to your work as an educator.

Action research is an approach to educational research that is commonly used by educational practitioners and professionals to examine, and ultimately improve, their pedagogy and practice. In this way, action research represents an extension of the reflection and critical self-reflection that an educator employs on a daily basis in their classroom. When students are actively engaged in learning, the classroom can be dynamic and uncertain, demanding the constant attention of the educator. Considering these demands, educators are often only able to engage in reflection that is fleeting, and for the purpose of accommodation, modification, or formative assessment. Action research offers one path to more deliberate, substantial, and critical reflection that can be documented and analyzed to improve an educator's practice.

Purpose of Action Research

As one of many approaches to educational research, it is important to distinguish the potential purposes of action research in the classroom. This book focuses on action research as a method to enable and support educators in pursuing effective pedagogical practices by transforming the quality of teaching decisions and actions, to subsequently enhance student engagement and learning. Being mindful of this purpose, the following aspects of action research are important to consider as you contemplate and engage with action research methodology in your classroom:

- Action research is a process for improving educational practice. Its methods involve action, evaluation, and reflection. It is a process to gather evidence to implement change in practices.
- Action research is participative and

collaborative. It is undertaken by individuals with a common purpose.

- Action research is situation and context-based.
- Action research develops reflection practices based on the interpretations made by participants.
- Knowledge is created through action and application.
- Action research can be based in problem-solving, if the solution to the problem results in the improvement of practice.
- Action research is iterative; plans are created, implemented, revised, then implemented, lending itself to an ongoing process of reflection and revision.
- In action research, findings emerge as action develops and takes place; however, they are not conclusive or absolute, but ongoing (Koshy, 2010, pgs. 1-2).

In thinking about the purpose of action research, it is helpful to situate action research as a distinct paradigm of educational research. I like to think about action research as part of the larger concept of living knowledge. Living knowledge has been characterized as “a quest for life, to understand life and to create... knowledge which is valid for the people with whom I work and for myself” (Swantz, in Reason & Bradbury, 2001, pg. 1). Why should educators care about living knowledge as part of educational research? As mentioned above, action research is meant “to produce practical knowledge that is useful to people in the everyday conduct of their lives and to see that action research is about

working towards practical outcomes” (Koshy, 2010, pg. 2). However, it is also about:

creating new forms of understanding, since action without reflection and understanding is blind, just as theory without action is meaningless. The participatory nature of action research makes it only possible with, for and by persons and communities, ideally involving all stakeholders both in the questioning and sense making that informs the research, and in the action, which is its focus. (Reason & Bradbury, 2001, pg. 2)

In an effort to further situate action research as living knowledge, Jean McNiff reminds us that “there is no such ‘thing’ as ‘action research’” (2013, pg. 24). In other words, action research is not static or finished, it defines itself as it proceeds. McNiff’s reminder characterizes action research as action-oriented, and a process that individuals go through to make their learning public to explain how it informs their practice. Action research does not derive its meaning from an abstract idea, or a self-contained discovery – action research’s meaning stems from the way educators negotiate the problems and successes of living and working in the classroom, school, and community.

While we can debate the idea of action research, there are people who are action researchers, and they use the idea of action research to develop principles and theories to guide their practice. Action research, then, refers to an organization of principles that guide action researchers as they act on shared beliefs, commitments, and expectations in their inquiry.

Reflection and the Process of Action Research

When an individual engages in reflection on their actions or experiences, it is typically for the purpose of better understanding those experiences, or the consequences of those actions to improve related action and experiences in the future. Reflection in this way develops knowledge around these actions and experiences to help us better regulate those actions in the future. The reflective process

generates new knowledge regularly for classroom teachers and informs their classroom actions.

Unfortunately, the knowledge generated by educators through the reflective process is not always prioritized among the other sources of knowledge educators are expected to utilize in the classroom. Educators are expected to draw upon formal types of knowledge, such as textbooks, content standards, teaching standards, district curriculum and behavioral programs, etc., to gain new knowledge and make decisions in the classroom. While these forms of knowledge are important, the reflective knowledge that educators generate through their pedagogy is the amalgamation of these types of knowledge enacted in the classroom. Therefore, reflective knowledge is uniquely developed based on the action and implementation of an educator's pedagogy in the classroom. Action research offers a way to formalize the knowledge generated by educators so that it can be utilized and disseminated throughout the teaching profession.

Research is concerned with the generation of knowledge, and typically creating knowledge related to a concept, idea, phenomenon, or topic. Action research generates knowledge around inquiry in practical educational contexts. Action research allows educators to learn through their actions with the purpose of developing personally or professionally. Due to its participatory nature, the process of action research is also distinct in educational research. There are many models for how the action research process takes shape. I will share a few of those here. Each model utilizes the following processes to some extent:

- Plan a change;
- Take action to enact the change;
- Observe the process and consequences of the change;
- Reflect on the process and consequences;
- Act, observe, & reflect again and so on.



Figure 1.1 Basic action research cycle

There are many other models that supplement the basic process of action research with other aspects of the research process to consider. For example, figure 1.2 illustrates a spiral model of action research proposed by Kemmis and McTaggart (2004). The spiral model emphasizes the cyclical process that moves beyond the initial plan for change. The spiral model also emphasizes revisiting the initial plan and revising based on the initial cycle of research:



Figure 1.2 Interpretation of action research spiral, Kemmis and McTaggart (2004, p. 595)

Other models of action research reorganize the process to emphasize the distinct ways knowledge takes shape in the reflection process. O’Leary’s (2004, p. 141) model, for example, recognizes that the research may take shape in the classroom as knowledge emerges from the teacher’s observations. O’Leary highlights the need for action research to be focused on situational understanding and implementation of action, initiated organically from real-time issues:

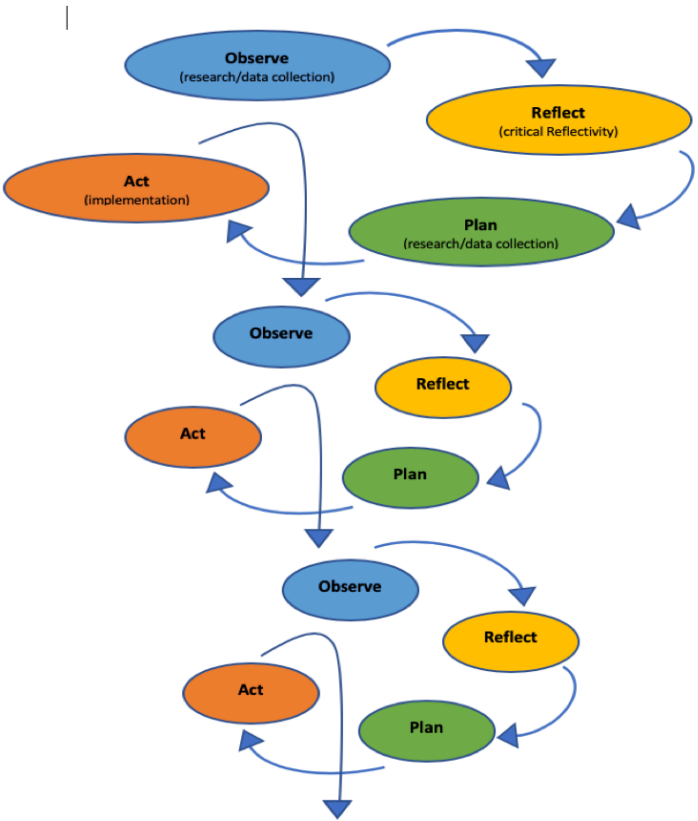


Figure 1.3 Interpretation of O’Leary’s cycles of research, O’Leary (2000, p. 141)

Lastly, Macintyre’s (2000, p. 1) model, offers a different characterization of the action research process. Macintyre emphasizes a messier process of research with the initial reflections and conclusions as the benchmarks for guiding the research process. Macintyre emphasizes the flexibility in planning, acting, and observing stages to allow the process to be naturalistic. Our interpretation of Macintyre process is below:

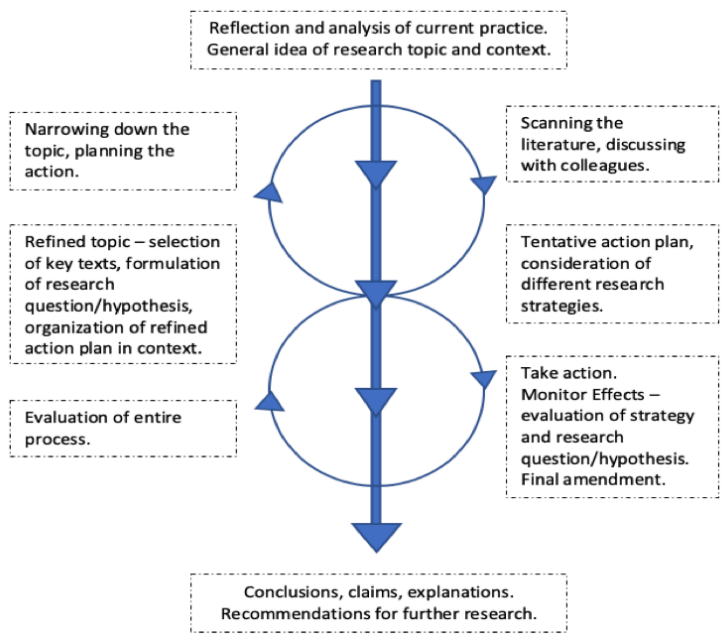


Figure 1.4 Interpretation of the action research cycle, Macintyre (2000, p. 1)

We believe it is important to prioritize the flexibility of the process, and encourage you to only use these models as basic guides for your process. Your process may look similar, or you may

diverge from these models as you better understand your students, context, and data.

Definitions of Action Research and Examples

At this point, it may be helpful for readers to have a working definition of action research and some examples to illustrate the methodology in the classroom. Bassey (1998, p. 93) offers a very practical definition and describes “action research as an inquiry which is carried out in order to understand, to evaluate and then to change, in order to improve educational practice.” Cohen and Manion (1994, p. 192) situate action research differently, and describe action research as emergent, writing:

essentially an on-the-spot procedure designed to deal with a concrete problem located in an immediate situation. This means that ideally, the step-by-step process is constantly monitored over varying periods of time and by a variety of mechanisms (questionnaires, diaries, interviews and case studies, for example) so that the ensuing feedback may be translated into modifications, adjustment, directional changes, redefinitions, as necessary, so as to bring about lasting benefit to the ongoing process itself rather than to some future occasion.

Lastly, Koshy (2010, p. 9) describes action research as:

a constructive inquiry, during which the researcher constructs his or her knowledge of specific issues through planning, acting, evaluating, refining and learning from the experience. It is a continuous learning process in which the researcher learns and also shares the newly generated knowledge with those who may benefit from it.

These definitions highlight the distinct features of action research and emphasize the purposeful intent of action researchers to improve, refine, reform, and problem-solve issues in their educational context. To better understand the distinctness of action research, these are some examples of action research topics:

Examples of Action Research Topics

- Flexible seating in 4th grade classroom to increase effective collaborative learning.
- Structured homework protocols for increasing student achievement.
- Developing a system of formative feedback for 8th grade writing.
- Using music to stimulate creative writing.
- Weekly brown bag lunch sessions to improve responses to PD from staff.
- Using exercise balls as chairs for better classroom management.

Action Research in Theory

Action research-based inquiry in educational contexts and classrooms involves distinct participants – students, teachers, and other educational stakeholders within the system. All of these participants are engaged in activities to benefit the students, and subsequently society as a whole. Action research contributes to these activities and potentially enhances the participants' roles in the education system. Participants' roles are enhanced based on two underlying principles:

- communities, schools, and classrooms are sites of *socially mediated actions*, and action research provides a greater understanding of self and new knowledge of how to negotiate these socially mediated environments;
- communities, schools, and classrooms are part of social systems in which humans interact with many cultural tools,

and action research provides a basis to construct and analyze these interactions.

In our quest for knowledge and understanding, we have consistently analyzed human experience over time and have distinguished between types of reality. Humans have constantly sought “facts” and “truth” about reality that can be empirically demonstrated or observed.

Social systems are based on beliefs, and generally, beliefs about what will benefit the greatest amount of people in that society. Beliefs, and more specifically the rationale or support for beliefs, are not always easy to demonstrate or observe as part of our reality. Take the example of an English Language Arts teacher who prioritizes argumentative writing in her class. She believes that argumentative writing demonstrates the mechanics of writing best among types of writing, while also providing students a skill they will need as citizens and professionals. While we can observe the students writing, and we can assess their ability to develop a written argument, it is difficult to observe the students’ understanding of argumentative writing and its purpose in their future. This relates to the teacher’s beliefs about argumentative writing; we cannot observe the real value of the teaching of argumentative writing. The teacher’s rationale and beliefs about teaching argumentative writing are bound to the social system and the skills their students will need to be active parts of that system. Therefore, our goal through action research is to demonstrate the best ways to teach argumentative writing to help all participants understand its value as part of a social system.

The knowledge that is conveyed in a classroom is bound to, and justified by, a social system. A postmodernist approach to understanding our world seeks knowledge within a social system, which is directly opposed to the empirical or positivist approach which demands evidence based on logic or science as rationale for beliefs. Action research does not rely on a positivist viewpoint to develop evidence and conclusions as part of the research process.

Action research offers a postmodernist stance to epistemology (theory of knowledge) and supports developing questions and new inquiries during the research process. In this way action research is an emergent process that allows beliefs and decisions to be negotiated as reality and meaning are being constructed in the socially mediated space of the classroom.

Theorizing Action Research for the Classroom

All research, at its core, is for the purpose of generating new knowledge and contributing to the knowledge base of educational research. Action researchers in the classroom want to explore methods of improving their pedagogy and practice. The starting place of their inquiry stems from their pedagogy and practice, so by nature the knowledge created from their inquiry is often contextually specific to their classroom, school, or community. Therefore, we should examine the theoretical underpinnings of action research for the classroom. It is important to connect action research conceptually to experience; for example, Levin and Greenwood (2001, p. 105) make these connections:

- Action research is context bound and addresses real life problems.
- Action research is inquiry where participants and researchers cogenerate knowledge through collaborative communicative processes in which all participants' contributions are taken seriously.
- The meanings constructed in the inquiry process lead to social action or these reflections and action lead to the construction of new meanings.
- The credibility/validity of action research knowledge is measured according to whether the actions that arise from it solve problems (workability) and increase participants' control over their own situation.

Educators who engage in action research will generate new knowledge and beliefs based on their experiences in the classroom.

Let us emphasize that these are all important to you and your work, as both an educator and researcher. It is these experiences, beliefs, and theories that are often discounted when more official forms of knowledge (e.g., textbooks, curriculum standards, districts standards) are prioritized. These beliefs and theories based on experiences should be valued and explored further, and this is one of the primary purposes of action research in the classroom. These beliefs and theories should be valued because they were meaningful aspects of knowledge constructed from teachers' experiences. Developing meaning and knowledge in this way forms the basis of constructivist ideology, just as teachers often try to get their students to construct their own meanings and understandings when experiencing new ideas.

Classroom Teachers Constructing their Own Knowledge

Most of you are probably at least minimally familiar with constructivism, or the process of constructing knowledge. However, what is constructivism precisely, for the purposes of action research? Many scholars have theorized constructivism and have identified two key attributes (Koshy, 2010; von Glasersfeld, 1987):

- Knowledge is not passively received, but actively developed through an individual's cognition;
- Human cognition is adaptive and finds purpose in organizing the new experiences of the world, instead of settling for absolute or objective truth.

Considering these two attributes, constructivism is distinct from conventional knowledge formation because people can develop a theory of knowledge that orders and organizes the world based on their experiences, instead of an objective or neutral reality. When individuals construct knowledge, there are interactions between an individual and their environment where communication, negotiation and meaning-making are collectively developing knowledge. For most educators, constructivism may be a natural inclination of their pedagogy. Action researchers have a similar

relationship to constructivism because they are actively engaged in a process of constructing knowledge. However, their constructions may be more formal and based on the data they collect in the research process. Action researchers also are engaged in the meaning making process, making interpretations from their data. These aspects of the action research process situate them in the constructivist ideology. Just like constructivist educators, action researchers' constructions of knowledge will be affected by their individual and professional ideas and values, as well as the ecological context in which they work (Biesta & Tedder, 2006). The relations between constructivist inquiry and action research is important, as Lincoln (2001, p. 130) states:

much of the epistemological, ontological, and axiological belief systems are the same or similar, and methodologically, constructivists and action researchers work in similar ways, relying on qualitative methods in face-to-face work, while buttressing information, data and background with quantitative method work when necessary or useful.

While there are many links between action research and educators in the classroom, constructivism offers the most familiar and practical threads to bind the beliefs of educators and action researchers.

Epistemology, Ontology, and Action Research

It is also important for educators to consider the philosophical stances related to action research to better situate it with their beliefs and reality. When researchers make decisions about the methodology they intend to use, they will consider their ontological and epistemological stances. It is vital that researchers clearly distinguish their philosophical stances and understand the implications of their stance in the research process, especially when collecting and analyzing their data. In what follows, we will discuss ontological and epistemological stances in relation to action research methodology.

Ontology, or the *theory of being*, is concerned with the claims or assumptions we make about ourselves within our social reality –

what do we think exists, what does it look like, what entities are involved and how do these entities interact with each other (Blaikie, 2007). In relation to the discussion of constructivism, generally action researchers would consider their educational reality as socially constructed. Social construction of reality happens when individuals interact in a social system. Meaningful construction of concepts and representations of reality develop through an individual's interpretations of others' actions. These interpretations become agreed upon by members of a social system and become part of social fabric, reproduced as knowledge and beliefs to develop assumptions about reality. Researchers develop meaningful constructions based on their experiences and through communication. Educators as action researchers will be examining the socially constructed reality of schools. In the United States, many of our concepts, knowledge, and beliefs about schooling have been socially constructed over the last hundred years. For example, a group of teachers may look at why fewer female students enroll in upper-level science courses at their school. This question deals directly with the social construction of gender and specifically what careers females have been conditioned to pursue. We know this is a social construction in some school social systems because in other parts of the world, or even the United States, there are schools that have more females enrolled in upper level science courses than male students. Therefore, the educators conducting the research have to recognize the socially constructed reality of their school and consider this reality throughout the research process. Action researchers will use methods of data collection that support their ontological stance and clarify their theoretical stance throughout the research process.

Koshy (2010, p. 23-24) offers another example of addressing the ontological challenges in the classroom:

A teacher who was concerned with increasing her pupils' motivation and enthusiasm for learning decided to introduce learning diaries which the children could take home. They were invited to record their reactions to the day's lessons

and what they had learnt. The teacher reported in her field diary that the learning diaries stimulated the children's interest in her lessons, increased their capacity to learn, and generally improved their level of participation in lessons. The challenge for the teacher here is in the analysis and interpretation of the multiplicity of factors accompanying the use of diaries. The diaries were taken home so the entries may have been influenced by discussions with parents. Another possibility is that children felt the need to please their teacher. Another possible influence was that their increased motivation was as a result of the difference in style of teaching which included more discussions in the classroom based on the entries in the dairies.

Here you can see the challenge for the action researcher is working in a social context with multiple factors, values, and experiences that were outside of the teacher's control. The teacher was only responsible for introducing the diaries as a new style of learning. The students' engagement and interactions with this new style of learning were all based upon their socially constructed notions of learning inside and outside of the classroom. A researcher with a positivist ontological stance would not consider these factors, and instead might simply conclude that the dairies increased motivation and interest in the topic, as a result of introducing the diaries as a learning strategy.

Epistemology, or the *theory of knowledge*, signifies a philosophical view of what counts as knowledge – it justifies what is possible to be known and what criteria distinguishes knowledge from beliefs (Blaikie, 1993). Positivist researchers, for example, consider knowledge to be certain and discovered through scientific processes. Action researchers collect data that is more subjective and examine personal experience, insights, and beliefs.

Action researchers utilize interpretation as a means for knowledge creation. Action researchers have many epistemologies to choose from as means of situating the types of knowledge they will generate by interpreting the data from their research. For

example, Koro-Ljungberg et al., (2009) identified several common epistemologies in their article that examined epistemological awareness in qualitative educational research, such as: objectivism, subjectivism, constructionism, contextualism, social epistemology, feminist epistemology, idealism, naturalized epistemology, externalism, relativism, skepticism, and pluralism. All of these epistemological stances have implications for the research process, especially data collection and analysis. Please see the table on pages 689-90, linked below for a sketch of these potential implications:

Koro-Ljungberg, M, Yendol-Hoppey, D, Smith JJ, & Hayes, S. (2009) (E)pistemological awareness, instantiation of methods, and uninformed methodological ambiguity in qualitative research projects. Educational Researcher 38: 687-699.

Again, Koshy (2010, p. 24) provides an excellent example to illustrate the epistemological challenges within action research:

A teacher of 11-year-old children decided to carry out an action research project which involved a change in style in teaching mathematics. Instead of giving children mathematical tasks displaying the subject as abstract principles, she made links with other subjects which she believed would encourage children to see mathematics as a discipline that could improve their understanding of the environment and historic events. At the conclusion of the project, the teacher reported that applicable mathematics generated greater enthusiasm and understanding of the subject.

The educator/researcher engaged in action research-based inquiry to improve an aspect of her pedagogy. She generated knowledge that indicated she had improved her students' understanding of mathematics by integrating it with other subjects – specifically in the social and ecological context of her classroom,

school, and community. She valued constructivism and students generating their own understanding of mathematics based on related topics in other subjects. Action researchers working in a social context do not generate certain knowledge, but knowledge that emerges and can be observed and researched again, building upon their knowledge each time.

Researcher Positionality in Action Research

In this first chapter, we have discussed a lot about the role of experiences in sparking the research process in the classroom. Your experiences as an educator will shape how you approach action research in your classroom. Your experiences as a person in general will also shape how you create knowledge from your research process. In particular, your experiences will shape how you make meaning from your findings. It is important to be clear about your experiences when developing your methodology too. This is referred to as researcher positionality. Maher and Tetreault (1993, p. 118) define positionality as:

Gender, race, class, and other aspects of our identities are markers of relational positions rather than essential qualities. Knowledge is valid when it includes an acknowledgment of the knower's specific position in any context, because changing contextual and relational factors are crucial for defining identities and our knowledge in any given situation.

By presenting your positionality in the research process, you are signifying the type of socially constructed, and other types of, knowledge you will be using to make sense of the data. As Maher and Tetreault explain, this increases the trustworthiness of your conclusions about the data. This would not be possible with a positivist ontology. We will discuss positionality more in chapter 6, but we wanted to connect it to the overall theoretical underpinnings of action research.

Advantages of Engaging in Action Research in the Classroom

In the following chapters, we will discuss how action research takes shape in your classroom, and we wanted to briefly summarize

the key advantages to action research methodology over other types of research methodology. As Koshy (2010, p. 25) notes, action research provides useful methodology for school and classroom research because:

Advantages of Action Research for the Classroom

- research can be set within a specific context or situation;
- researchers can be participants – they don't have to be distant and detached from the situation;
- it involves continuous evaluation and modifications can be made easily as the project progresses;
- there are opportunities for theory to emerge from the research rather than always follow a previously formulated theory;
- the study can lead to open-ended outcomes;
- through action research, a researcher can bring a story to life.

2. Action Research as a Process for Professional Learning and Leadership

ESSENTIAL QUESTIONS

- What is the role of action research in professional learning and leadership?
- What are the educational contexts that action research takes place?
- What are the critiques of action research as a methodology?
- What are the basic stages of an action research project?

In the previous chapter, we were able to explore the idea of action research, the purpose of action research, and the theoretical underpinnings of action research. Hopefully, you now have a good understanding of the landscape of action research and the contours in which it can take shape in educational contexts. It is important to emphasize that the primary aim of conducting action research in an educational context is to study and improve upon an educator's, or group of educators', practice. This chapter will explore some of the practical aspects of action research, in particular, the forethought and planning required to engage in a successful action research experience.

As we begin to transition from the theoretical to the more practical aspects of action research, we want to provide a few questions to consider:

- How does the *epistemological*, *ontological*, and *theoretical* basis of action research fit with your pedagogical philosophy in the classroom? Will using action research require any paradigmatic shifts in how you approach your pedagogy?
- What are the pedagogical benefits of using action research in your educational context?
- What are the most significant affordances and challenges of using action research in your educational context?

After considering the questions above, we think it is important from a practical standpoint to consider and situate action research as part of an educator's responsibility to professional learning and leadership.

Action Research as Professional Learning and Leadership

Thus far, we have made the case that action research is a useful methodology for educators because it formalizes a process you already use to improve your pedagogy; but how does it benefit you as a professional and your professional identity? In *Becoming Critical* Carr and Kemmis (2003) list characteristics of action research that make it integral to critical professional learning for educators. We have summarized their five characteristics of action research as a methodology for educators:

Five Characteristics of Action Research as a Methodology for Educators

- action research rejects positivist notions of rationality, objectivity, and truth and instead has an openness to competing possibilities for effective pedagogical practice in educational contexts;
- action research employs educators' reflective and interpretive categories, and uses the language of educators as a basis for educators to explore and develop their own pedagogical theorizing;
- action research allows educators' unrealized self-understandings to be discerned by analyzing their own practices and understandings;
- action research connects reflection to action, enabling educators to overcome barriers to pedagogical change through awareness of social and systemic factors influencing their educational context;
- action research involves deep consideration of theory and practice and to demonstrate this critically self-reflective action, researchers develop and organize knowledge in which truth is evidenced through its relation to practice.

To synthesize these five characteristics in terms of practical knowledge, we think it is important to now consider a “so what?” type of question. After learning these characteristics, why would an educator engage in action research for the purpose of professional

learning or leadership? The following five principles correspond to the five characteristics above:

Why an Educator would Engage in Action Research

- the development of an educator's pedagogy is not about developing a set of "surefire" technical competencies; it is concerned with finding the most effective practices for the students in their educational context;
- one way for educators to be consistently informed on pedagogy and increase their skills is through actively being involved in a culture of inquiry that dually relies on the latest educational research and their own classroom to spark new inquiry;
- by doing action research, educators are engaged in the process of hypothesizing, theorizing, and developing self-knowledge related specifically to their practice;
- when educators engage in action research, they develop agency and gain control of knowledge, and address questions for themselves, instead of being subservient to the knowledge enacted on their educational context;
- when educators are engaged in research, educators are naturally engaged in educational theorizing because they are reflecting on practice systematically and critically, to close the distance between educational theory practice, which many educators feel (Hopkins, 2003).

Professional learning in education takes many forms. Action research is unique in the realm of professional learning because it is tailored to the educator's real time pedagogical foci, issues, or needs. Professional learning opportunities often fail to meet the expectations of educators because they are meant for large groups of teachers, either based on a school, topic, subject, or course. Even at the course level of professional learning, while the content may be the same for each teacher, the students and educational context are different for each teacher – which creates unique challenges that educators want to address through their professional learning. One advantage of traditional professional learning sessions is the group aspect, or collaborative thinking that takes place. Action research is flexible enough that collaborative inquiry could be part of the process, and educators could include colleagues as part of their research. In many ways, action research not only contributes to professional learning, but also provides professional leadership to colleagues.

Professional leadership in education, or teacher leadership, also takes many forms. Danielson (2007) lists teacher leadership in her framework for teaching, as one of several professional responsibilities for educators. Educators who engage in action research and share their findings, are working to impact professional learning, and subsequently student learning, beyond their classrooms. Engaged educators who attain and continue to receive recognition in the teaching profession invest a lot of time and energy to stay informed and further develop their skills. Danielson (2007) notes that these educators are in a prime position to exercise leadership among their colleagues. Often times educators view conferences and professional learning sessions as the only opportunities to further develop their skills and become leaders among their colleagues. However, Danielson (2007) goes on to describe a distinguished educator as someone who engages in a combination of seeking “out opportunities for professional development and makes a systematic effort to conduct action research” (105). In this way, professional learning is a part of the

action research process that engages educators in reflection and conversations outside of their educational context, while also potentially providing an alternative lens to analyze their data.

Data-driven decision making by administrators, teachers, and teams of educators, often facilitated by teacher leaders, is a prevalent practice in schools that impacts educator performance and student learning. This sort of professional learning through collaborative inquiry provides vital contextual data to improve pedagogy in classrooms and throughout the school. Sagor (2010) defines collaborative action research as "the team inquiry process, when a group of individuals who are a part of a specific PLC, grade-level, or teacher learning team engage in inquiry and research." These teams can become a means for collaboratively engaging in action research and developing data that is relative to the school. Data is most valuable to an educational context when it is deeply relatable and relevant to the specific educational context. Data specifically related to the educational context can increase a school's capacity to focus on curricular and instructional strategies with the greatest potential to support student learning. In an effort to spark professional leadership, and as we discuss the process of action research in future chapters, please discuss with colleagues the potential action research projects in your own classroom and think about how to leverage those toward your school's PLC, professional learning, or school-wide improvement plans. Thinking about your action research in this way adds another layer of purpose and makes action research a truly valuable process for improvement throughout your educational context.

What Will Action Look Like in My Classroom?

Now that we have discussed the relevance of action research for professional learning and leadership, it may be a little easier to conceptualize an action research project, or perhaps you already have an idea ready to start. O'Leary (2004) provides a useful list of processes related to action research that could help you think about your initial plans. Here are some questions to think about related to the processes of an action research project:

- **Does it address a practical problem(s)?** Educators typically identify a practical problem in their educational context that has multiple possible ways to be addressed. The impetus to improve professional practice prioritizes change.
- **Does it generate knowledge?** Generating knowledge promotes change. By addressing this practical problem, you will generate knowledge.
- **Does it enact changes in your pedagogy/classroom/school?** The changes generated by the knowledge will be useful to enact change relatively close to the conclusion of the research project.
- **Is it participatory?** Action research is participatory, and the primary researcher is involved in the action, potentially along with other researchers and stakeholders.
- **Could it be a cyclical process?** Action research is a cyclical process that results from emerging knowledge. Once better situational understanding is gained through research, a change can be implemented and researched again, resulting in an evaluative practice that reciprocates between informed action and critical reflection.

I want to emphasize that this is one of interpretations of the processes involved in the action research process, and you should adapt these basic processes to fit your needs as an educator and researcher. These processes will also become clearer in purpose as we discuss the contexts for action research.

The Contexts for Considering Action Research

Action research can take place in many professional settings and contexts. As we think about some of those contexts we will focus on the most common in educational settings. I have also provided some examples for research in each context.

Improving Classroom Practice

These projects are conducted by educators in their classroom context and focus on pedagogical, curricular, or instructional aspects of their practice. Examples could include:

- How can Socratic questioning improve engagement in class discussions?
- Who participates more in my class?
- How can integrated social studies and ELA lessons improve students' reading scores?
- Will learning diaries in mathematics lessons enhance students' conceptual understanding?
- How can Flipgrid help connect student interests to content standards?

Examining an Educational Theme

These projects allow educators to examine new ideas or themes that they have encountered in professional learning opportunities. Examples could include:

- How can I implement personalized learning in my classroom?
- Can I integrate all subjects into a problem-based inquiry project?
- In what ways do Breakout Box activities prepare students for content-based learning?
- Do exercise balls help students focus longer while sitting at their seats?

Educational Context Focus

These projects focus on interaction between humans and the ecological space of the context. Examples could include:

- How can using non-letter grades improve communication with parents?
- How can we increase engagement at parent meetings?
- Does going outside and doing yoga improve student focus in the afternoon?
- What is the effect of eliminating homework?
- Does presenting to community members, outside the school community, improve engagement or motivation for group projects?
- What anti-bullying strategies reduce verbal teasing?

Implementing a New Initiative Based on Policy or Research

These projects are sparked by new policy or research data or are related to district or state-wide initiatives. These are often group or collaborative projects. Examples could include:

- What are the best methods to prepare teachers for a school-wide one-to-one device launch?
- Do weekly meetings help support first-year teachers?
- Adopting the new formative assessment framework for inquiry-based learning.

Critiques of Action Research

Action research is a fairly new form of acceptable educational research; therefore, educators should be aware of some of the common critiques you may hear when presenting or sharing your research. These critiques can also be easily dealt with in the planning and development of your action research project. The following are three of the most common critiques of action research.

Critique #1: *Action research lacks rigor and trustworthiness in comparison to other methodologies...*

The rigor of a research project is shaped by the manner in which data collection and analysis are conducted in the research process. For example, rigor can develop in data collection by using a variety of research methods to collect data (discussed further in Chapter 6). Sharing data with critical friends and colleagues, or triangulating the data, would demonstrate rigor in the data analysis process. Issues of trustworthiness are raised around the question: Can you be/maintain objectivity when you are conducting research on your own practice? Trustworthiness can be viewed as the strength of the inference made possible by the given research study. Trustworthiness can be achieved primarily through triangulation of data (multiple sources of data) and a clear description of context, participants, processes, and analysis which allows for transferability as a reader. Maintaining a rigorous data collection and analysis process will help with trustworthiness, but also being clear in your epistemological stance and positionality from the beginning of the project also contributes to trustworthiness. Rigor and trustworthiness can easily be addressed through developing a research plan and sticking to it. Adherence to ethical research (IRB) will also add to trustworthiness, we will discuss this in a later chapter.

Critique #2: *Action research findings are not generalizable to other educational contexts...*

Generalizability is often a concern for quantitative researchers who are trying to solve problems across large portions of the population. Simply put, the action researcher is not concerned with

generalizable data that can provide answers to other educators in different contexts (However, it is great if this happens!). The action researcher is primarily concerned with generating knowledge based on the actions within their own situated context. Action research findings are generalizable only within specific situations and within that specific educational context, which is described and considered as part of the research process. Sharing findings could be applicable to educators who are interested or who are in similar circumstances, either locally, nationally, or globally.

Critique #3: *Action research is based on a deficit model...*

The problem-solving nature of action research may give an appearance that it is based on a deficit model. This is not necessarily the case; however, if researchers are not conscious of deficit thinking or deficit models of thinking, it is possible to engage in action research based on perceived student deficits. From my perspective, developing strategies for solving a problem within a situation with the sole purpose of improving practice is not rooted in deficit thinking, especially if they really generate knowledge. Regardless, researchers need to be aware of deficit thinking and make sure their research questions do not rely on assumptions about students' weaknesses based on demographic groupings.

What's Ahead? Thinking about the Stages of Action Research

The models of action research presented in Chapter 1 all described action research as a cyclical process. It is exciting to think about a cyclical process of professional learning to improve your practice; however, it can also be overwhelming to think about the process. We think it is helpful to have some awareness of what may happen during the project, represented in distinct stages, to provide an overview of the whole process. This will help you plan

more efficiently, but we think it is also important to be flexible and understand that your project does not always need to follow that order. Here is what to expect:

- **Identifying a topic in the educational context**
- **Reviewing related literature**
- **Revising the topic**
- **Developing a research question**
- **Plan research activities**
- **Collect data**
- **Analyze data**
- **Action implementation**
- **Reflection on action**
- **Report, share, or document.**

Each of these steps has some brief considerations, yet I would like to discuss these steps in three broad areas of focus due to the overlap of these considerations.

- **Topic Development**
- **Researching in Action**
- **Action Implications**

Topic Development

Identifying and developing a topic that is important and relevant to your practice is vitally essential. Your topic not only shapes the area of educational knowledge you will contribute to, but it will also shape your research question. It is usually helpful to identify and write down three to five potential topics. In addition to writing the topic down, describe why each topic is important or relevant to you, your practice, your students, and/or your educational context. Then, if you are still having a hard time deciding on a topic, write down the intended benefits for you, your practice, your students, and/or your educational context. It may also be helpful to discuss your ideas with others, to help focus your thoughts and provide

another perspective on the feasibility of completing a study on a particular topic, its relevance and implications for practice.

Once you have identified a topic, it is important to conduct a literature review (discussed fully in Chapter 3) to find out what the field of education has researched in regards to your topic. This will help you understand what we know and don't know about your topic. Once you have conducted a thorough literature review you will feel capable of potentially revising your topic to reflect the knowledge base, and possibly narrow the scope of your project for your own purposes.

Lastly, you will be able to develop a research question (discussed fully in Chapter 4) based on your topic, the reviewed literature, and your intended outcomes.

Researching Action

After you have thoroughly vetted a topic and developed a research question, you will be ready to begin the process of researching your topic in your educational context. In consideration of your research question, you can begin to plan your research activities—when and how you will conduct the research in your educational context (Chapter 4). This will include a timeline of activities. You will then begin planning your data collection (Chapter 5) methods and fit those into your timeline. You will also need to think about a proposed process, or order for analyzing your data. This may seem strange; however, it helps contribute to the rigor and validity of your study to have a plan that fits within your epistemological stance.

Once your plan is set, you can begin the data collection process. After data collection, you can begin the analysis of the data (Chapter 6).

Action Implications

After you have analyzed your data, you should have some indication as to implications for your research question. You will have the opportunity to reflect on the research, take action, and eventually share or report your findings. Many of you will have reason to change an action in your educational context, whether it

is the following week, the next semester, or next school year. This is where the cyclical process of action research can take shape.

Action Research in Action: A Vignette

As a classroom teacher, I was often engaged in action research without realizing it, and typically this process began from reflection. As a graduate student, weekly reflections on the required readings in my Teachers as Researchers course prompted me to identify issues in my classroom to address, either through pedagogical changes or adjustments to my curriculum. In a less formal way, action research naturally emerged as part of my yearly evaluations with administration. In one particular year, after reflecting on my own practice, I realized (rather, admitted) that my junior-level English students did not enjoy our classroom novel studies, resulting in a lack of engagement and poor performance for many of them. The ‘start and stop’ method—where students read a chapter, then stop to either discuss the chapter or take a quiz—did not replicate how people read books, and it is no wonder that it destroyed my students’ desire to engage with the novels they were assigned. This is where action research emerged—I established a driving question for my own classroom problem: *How can I adapt whole novel studies to reflect the natural reading process, take into account each students’ reading level, and improve overall reading performance and engagement?*

The next step in this process was to find research that already existed on whole novel studies in the classroom and

use that information as a catalyst for my own research. I read several examples of alternative methods to whole novel studies, but most of what I could find was based on a middle school classroom. This was good news! It meant, on a large scale, my action research would have a place in the broad educational context by filling an existing void in the information available to classroom teachers. On a small scale, this meant other teachers in my own department could benefit from what I design since a lack of resources exists in this area.

After reading several examples of alternative methods, I adapted the practices that seemed to fit best with my own students and created my own version of how to work with whole novels in the high school English classroom. I implemented this method in two different courses, one of which was considered an ‘advanced’ course, with students at all different reading levels. I tracked their progress in multiple ways and recorded the information on spreadsheets for future use. After a successful first attempt at changing my practice, I presented the findings to my colleagues at a department meeting, and many adapted my method to use in their own classrooms.

Though this example of action research does not reflect a formalized project, it speaks to how teachers naturally engage in the process of questioning and problem-solving to create change for their students. It also demonstrates the value in what teachers discover in their own classrooms. Researchers are often criticized for being too far removed from classroom practice to really understand what teachers need; but *teacher researchers* have the opportunity to be their own guide and to potentially influence teacher praxis in positive and practical ways.

3. Planning Your Research: Reviewing the Literature and Developing Questions

ESSENTIAL QUESTIONS

- What is relevant literature? What are the best ways to find it?
- What are the best ways to organize your relevant literature?
- What are the intended outcomes of reviewing your relevant literature?

Nearly all research begins with a review of literature that is relevant to the topic of research, even if it is only a casual review. Reviewing the available literature on your topic is a vital step in the research process. The literature review process provides an anchor for your inquiry. O'Leary (2004, p. 66) states, the “production of new knowledge is fundamentally dependent on past knowledge” because “it is virtually impossible for researchers to add to a body of literature if they are not conversant with it.” By reviewing the literature in the initial stages of the inquiry process, researchers are better able to:

- Understand their topic;
- Develop and focus a topic;

- Provide a clear rationale for, or better situate, their topic;
- Fine-tune their research questions.

In terms of thinking about methodology and the actual research process, reviewing the literature can help researchers:

- Identify well-vetted data collection and analysis methods on their topic;
- Determine whether to replicate a previous study, or develop a completely new study;
- Add rigor and validity to the research by validating the topic, methods, and significance.

Lastly, reviewing the literature also helps the researcher make sense of their findings, in both their field of study and in their educational context, by:

- Assessing whether the findings correlate with findings from another study;
- Determining which of the findings are different than previous studies;
- Determining which of the findings are unique to the researcher's educational context.¹

As you may see, the literature review is the backbone, anchor, or foundation of your research study. Overall the review of literature helps you answer three important questions that are the result of the bullet points outlined above. The literature review helps you answer the following:

1. We will talk about this aspect of literature reviews further in Chapters 6 and 7.

- What do we **know** about your topic?
- What do we **not know** about your topic?
- How does your research **address** the gap between *what we know* and *what we don't* about your topic?

After reviewing the literature, if you are able to answer those three questions, you will have a very clear and well-rationalized justification for your inquiry. If you cannot answer those questions, then you should probably keep reviewing the literature by looking for related topics or synonyms of major concepts.

While an extensive review of the literature about your topic of study is expected, you should also be realistic as to what you are able to manage. For topics that have a lot of research literature available, make sure you establish parameters for your research, such as:

- **Temporal** (e.g., only articles in the last 5 or 10 years)
- **Content Area** (e.g., only in science and math classrooms)
- **Age or grade** (e.g., only middle school classrooms)
- **Research Subject** (e.g., girls only, teachers, struggling readers)

These categories provide only a few examples, but parameters like

these can make your review of literature much more manageable and your study much more focused.

What Types of Literature Should You Consider in Your Review?

It is helpful to consider the characteristics, purposes, and outcomes of different types of literature. Below are four broad categories I identify within educational research literature. I want to emphasize that my categories are in no way definitive, and only represent my own understanding.

Policy-Based Literature

Policy-based literature includes official documents that outline education policy with which the practitioner needs to be familiar. For example, the Common Core Standards or Content Standards are often referenced in articles to situate the need for research in relation to the standards; if my topic was on place-based education with middle school social studies students, I might have to look at national social studies standards. There also may be initiatives launched by organizations or researchers that become accepted practice. The documents that launch these initiatives (e.g., reports, articles, speeches) would also be useful to review. An example would be the *Report of the National Reading Panel: Teaching Children to Read* report from the National Reading Panel. These documents may provide rationale, based on the theories and concepts they utilize, and they may provide new ways of thinking about your topic. Similarly, if your topic is based on the local context, recent newspaper articles could also provide policy-type insights. All of these policy-based insights will be useful in providing the landscape or background for your work.

Theoretical Literature

Once you have identified your theoretical perspective, it is also important to locate your research within the appropriate theoretical literature. Many of you may be engaged in highly practice-based or small-scale research and wonder if you need a theoretical basis in your literature

review. Regardless of the extent of your project, theoretical literature will help with the rigor and validity of your study and will help identify any theoretical views that underlie your topic. For example, if your study focuses on the place-based education in enhancing social studies students' learning, it is highly probable that you would cite Kolb's (1984/2014) work on Experiential Learning. By using Kolb's work, you situate your research theoretically in the area of experiential learning.

Applicable Literature

Applicable literature will account for the bulk of your literature review. The previous two types of literature provide indication as to where your research is rationalized professionally and situated theoretically. Applicable literature will mainly come from journals related to your specific field of study. If I was doing a study in a social studies classroom, I would look at the journals *The Social Studies*, *Social Education*, and *Social Studies Research and Practice*. Use Google Scholar or your university library databases to examine literature in your specific area. When using these search engines and databases, start as specific as possible with your topic and related concepts. Using the example of place-based learning from above, I would search for “place-based learning” and “social studies” and “middle school” and “historic sites”. If I did not find many articles with this first search, then I would remove “historic sites” and search again. Books or handbooks on research may also have some useful studies to support your literature review section.

Methodological Literature

When sharing or reporting your work, you will want to review and cite research methodology literature to justify the methods you chose. When reading other research articles, pay attention to the research methods used by researchers. It is especially important to find articles that use and cite action research methodology. This type of

literature will provide further support of your data gathering and analysis methods. Again, your methods should fit within your theoretical and epistemological stances. In addition, you'll want to review data collection methods and potentially borrow or adapt rubrics or surveys from other studies.

Sources of Relevant Literature

When searching for these four types of literature, there are two ways to think about possible sources:

- **primary sources** include government publications, policy documents, research papers, dissertations, conference presentations and institutional occasional papers with accounts of research;
- **secondary sources** use primary sources as references, such as papers written for professional conferences and journals, books written for practicing professionals and book reviews. This is often called “reference mining” as you look through the reference lists of other studies and then return to the primary source that was cited.

Secondary sources are often just as valuable as primary sources, or potentially more valuable. When beginning your search, secondary sources can provide links to a wealth of primary sources that the secondary source author has already vetted for you, and likely with similar intentions. This is especially true of research handbooks. You will come across both types of literature wherever you search, and they both provide a landscape for your topic and add value to your literature review.

Regardless of being a primary or secondary source, you want to make sure the literature you review is peer-reviewed. Peer-reviewed simply means that the article was reviewed by two to three scholars in the field before it was published. Books, or edited books, would have also gone through a peer-review process. We often recommend teachers to look at professional books from reputable publishing companies and professional organizations, such as ASCD, NCTE, NCTM, or NCSS. This is a way for scholars to objectively review each other's work to maintain a high level of quality and ethics in the publication of research. Most databases have mostly peer-reviewed journals, and often provide a filter to sort out the non-peer-reviewed journals.

Using the Internet

The internet is a valuable research tool and is becoming increasingly efficient and reliable in providing peer-reviewed literature. Sites like Google Scholar are especially useful. Often, and depending on the topic, the downside of internet-based searches is that it will generate thousands or millions of sources. This can be overwhelming, especially for new researchers, and you will have to develop ways to narrow down the results.

Professional organization websites will also have resources or links to sources that have typically been vetted. With all internet sources, you should evaluate the information for credibility and authority.

Evaluating sources from the Internet

Evaluating internet sources is a whole field of study and research within itself, and an in-depth discussion would take away from the focus of this book. However, O' Dochartaigh (2007) provides a chapter to help guide the internet source evaluation process. Here is a brief summary, based on O' Dochartaigh's book, to give you a general idea of the task of evaluating sources:

- Examine if the material belongs to an advocacy group. Many times, these sources are fine, however, they

require extra examination for bias or funding interests.

- As mentioned above, many academic papers are published in refereed journals which are subject to peer-review. Papers found on academic or university websites are typically refereed in some manner; however, some papers are posted by academics on their personal sites and have not been reviewed by other academics. Papers published solely by academics or other experts require further scrutiny before citing.
- When you are reviewing newspaper and magazine articles from the internet be wary of potential conflicts of interest based on the political stance of that periodical.

Therefore, it is wise to consider the objectivity of any source you find on the internet before you accept the literature.

We always recommend that students consider a few questions in their evaluation of sources, which are similar to the formal questions outlined by O' Dochartaigh (2007):

- Is it clear who is responsible for the document?
- Is there any information about the person or organization responsible for the page?
- Is there a copyright statement?
- Does it have other publications that reinforce its authority?
- Are the sources clearly listed so they can be verified?
- Is there an editorial involvement?
- Are the spelling and grammar correct?
- Are biases and affiliations clearly stated?
- Are there dates for when the document was last updated or revised?

Organizing your Literature

When you begin, here are some things to think about as you read the literature. Again, these are not definitive, but merely provided for guidance. These questions are especially focused on other action research literature:

Questions to Think about as You Examine the Literature

- What was the context of their research?
- Who was involved? Was it a collaborative project?
- Was the choice of using action research as a method justified? Are any models discussed?
- What 'actions' actually took place?
- How was data gathered?
- How was data analyzed?
- Were ethical considerations addressed? How?
- What were the conclusions? Were they justified using appropriate evidence?
- Was the report accessible? Useful?
- Is it possible to replicate the study?

Regardless of the amount of literature you review, your challenge will be to organize the literature in way that is manageable and easy to reference. It is important to keep a record of what you read and how it relates conceptually to your topic. Some researchers even use the questions above to organize their literature. It is easy to read and think about the content of an article by making brief notes, however, this is often not enough to initially begin to develop your study or write about your findings. I will state the obvious here: organizing your literature search efficiently from the start is vital!

No matter how you choose to record or document the articles you read (e.g., paper, computer, photo), I would suggest thinking about the format in terms of index cards. Index cards are a very practical and simple model because the space limits you to be precise in recording vital information about each article. I typically create a document on my computer, allow each article the space of an index card, and focus on recording the following information:

- **Author**
- **Title**
- **Date**
- **Journal/Book Chapter Title**
- **Main Arguments/Key findings**
- **Pertinent Quote(s)**
- **Implications**
- **Connective Points (how does it relate to my work and/or other articles)**

I find that these aspects provide the information I need to be refreshed on the article and to be able to use it upon review.

There are also a lot of computer applications that are very useful and efficient in managing your literature. For example, *Mendeley*® provides comprehensive support for reviewing literature, even allowing you to store the article itself and make comments or highlights in text. There are also many citation apps that are helpful if you continue this research agenda and use roughly the same literature for each project.

Using the Literature

Think ahead to when you have collected and read a good amount of literature on your topic. You are now ready to use the literature to think about your topic, your research question, and the methods you plan to use. It might be helpful to peek ahead to Chapter 7 where I discuss writing the literature review for a report to give you an idea of the end goal. The primary purpose of engaging in a literature review is to provide knowledge to construct a framework

for understanding the landscape of your topic. I often suggest for students to think of it as constructing an argument for your research decisions, or as if you are telling a story of how we got to this point in researching your topic. Either way you are situating your research in **what we know** and **don't know** about your topic.

Naturally we tend to think about, and potentially write about, the literature in relation to the article's author (e.g. Clark and Porath (2016) found that...). However, more commonly today in educational research you will find that literature reviews are organized by themes. It can be a little more organic to think about literature in terms of themes because they emerge or become more defined as you read. Also thinking thematically allows the articles to naturally connect and build on each other, whereas thinking in terms of authors can fragment thinking about the topic. In terms of thinking thematically, here are some guidelines:

- Identify the significant themes that have emerged organically from the literature review. These themes would be concepts or ideas that you typed or wrote down in your note-taking or management system.
- Introduce the common concepts or ideas by themes, instead of by authors' disjointed viewpoints. Paragraphs in a thematic literature review begin like: *The research on teacher self-efficacy has identified several key factors that contribute to strong self-efficacy....*
- Lastly, once you have introduced each theme and explained it, then present evidence from your readings to demonstrate the parameters of the knowledge on the theme, including areas of

agreement and disagreement among researchers. Using the evidence, explain what the evidence for the theme means to your topic and any of your own relational or critical commentary.

Another way to think about structuring a literature review is a funnel model. A funnel model goes from broad topic, to sub-topics, to link to the study being undertaken. You can think of a literature review as a broad argument using mini-arguments. To use the funnel model, list your topic and the related subtopics, then design questions to answer with the literature. For example if our topic was discussion-based online learning, we might ask the following questions before reading the literature:

- Why is **discussion** important in learning?
- How does discussion support the development of **social, cognitive, and teacher presence** in an **online** course?
- What does research say about the use of **traditional discussion boards**?
- What does the research say about **asynchronous, video-based discussion**?
- How have other researchers **compared** written and video responses?
- How does this literature review **link** to my study?

O’Leary (2004) provides an interesting representation and model of the purpose for the literature review in the research process, in Figure 3.1. We will leave this for you to think about before moving on to Chapter 4.

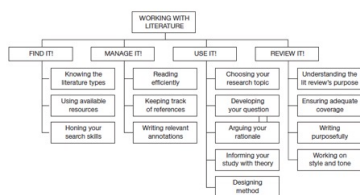


Figure 3.1 Reviewing the Literature
O'Leary (2004).

4. Preparing for Action Research in the Classroom: Practical Issues

ESSENTIAL QUESTIONS

- What sort of considerations are necessary to take action in your educational context?
- How do you facilitate an action plan without disrupting your teaching?
- How do you respond when the unplanned happens during data collection?

An action research project is a practical endeavor that will ultimately be shaped by your educational context and practice. Now that you have developed a literature review, you are ready to revise your initial plans and begin to plan your project. This chapter will provide some advice about your considerations when undertaking an action research project in your classroom.

Maintain Focus

Hopefully, you found a lot of research on your topic. If so, you will now have a better understanding of how it fits into your area and field of educational research. Even though the topic and area you are researching may not be small, your study itself should clearly focus on one aspect of the topic in your classroom. It is important to maintain clarity about what you are investigating because a lot

will be going on simultaneously during the research process and you do not want to spend precious time on erroneous aspects that are irrelevant to your research.

Even though you may view your practice as research, and vice versa, you might want to consider your research project as a projection or megaphone for your work that will bring attention to the small decisions that make a difference in your educational context. From experience, our concern is that you will find that researching one aspect of your practice will reveal other interconnected aspects that you may find interesting, and you will disorient yourself researching in a confluence of interests, commitments, and purposes. We simply want to emphasize – don't try to research everything at once. Stay focused on your topic, and focus on exploring it in depth, instead of its many related aspects. Once you feel you have made progress in one aspect, you can then progress to other related areas, as new research projects that continue the research cycle.

Identify a Clear Research Question

Your literature review should have exposed you to an array of research questions related to your topic. More importantly, *your review should have helped identify which research questions we have addressed as a field, and which ones still need to be addressed.* More than likely your research questions will resemble ones from your literature review, while also being distinguishable based upon your own educational context and the unexplored areas of research on your topic.

Regardless of how your research question took shape, it is important to be clear about what you are researching in your educational context. Action research questions typically begin in ways related to “How does ... ?” or “How do I/we ... ?”, for example:

Research Question Examples

- How does a semi-structured morning meeting improve my classroom community?
- How does historical fiction help students think about people's agency in the past?
- How do I improve student punctuation use through acting out sentences?
- How do we increase student responsibility for their own learning as a team of teachers?

I particularly favor questions with I or we, because they emphasize that you, the actor and researcher, will be clearly taking action to improve your practice. While this may seem rather easy, you need to be aware of asking the right kind of question. One issue is asking a too pointed and closed question that limits the possibility for analysis. These questions tend to rely on quantitative answers, or yes/no answers. For example, "How many students got a 90% or higher on the exam, after reviewing the material three times?"

Another issue is asking a question that is too broad, or that considers too many variables. For example, "How does room temperature affect students' time-on-task?" These are obviously researchable questions, but the aim is a cause-and-effect relationship between variables that has little or no value to your daily practice.

I also want to point out that your research question will potentially change as the research develops. If you consider the question:

- How do I improve student punctuation use through acting out sentences?

As you do an activity, you may find that students are more comfortable and engaged by acting sentences out in small

groups, instead of the whole class. Therefore, your question may shift to:

- How do I improve student punctuation use through acting out sentences, *in small groups*?

By simply engaging in the research process and asking questions, you will open your thinking to new possibilities and you will develop new understandings about yourself and the problematic aspects of your educational context.

Understand Your Capabilities and Know that Change Happens Slowly

Similar to your research question, it is important to have a clear and realistic understanding of what is possible to research in your specific educational context. For example, would you be able to address unsatisfactory structures (policies and systems) within your educational context? Probably not immediately, but over time you potentially could. It is much more feasible to think of change happening in smaller increments, from within your own classroom or context, with you as one change agent. For example, you might find it particularly problematic that your school or district places a heavy emphasis on traditional grades, believing that these grades are often not reflective of the skills students have or have not mastered. Instead of attempting to research grading practices across your school or district, your research might instead focus on determining how to provide more meaningful feedback to students and parents about progress in your course. While this project identifies and addresses a structural issue that is part of your school and district context, to keep things manageable, your research project would focus the outcomes on your classroom. The more research you do related to the structure of your educational context the more likely modifications will emerge. The more you understand these modifications in relation to the structural issues you identify within your own context, the more you can influence others by sharing your work and enabling others to understand the

modification and address structural issues within their contexts. Throughout your project, you might determine that modifying your grades to be standards-based is more effective than traditional grades, and in turn, that sharing your research outcomes with colleagues at an in-service presentation prompts many to adopt a similar model in their own classrooms. It can be defeating to expect the world to change immediately, but you can provide the spark that ignites coordinated changes. In this way, action research is a powerful methodology for enacting social change. Action research enables individuals to change their own lives, while linking communities of like-minded practitioners who work towards action.

Plan Thoughtfully

Planning thoughtfully involves having a path in mind, but not necessarily having specific objectives. Due to your experience with students and your educational context, the research process will often develop in ways as you expected, but at times it may develop a little differently, which may require you to shift the research focus and change your research question. I will suggest a couple methods to help facilitate this potential shift. First, you may want to develop criteria for gauging the effectiveness of your research process. You may need to refine and modify your criteria and your thinking as you go. For example, we often ask ourselves if action research is encouraging depth of analysis beyond my typical daily pedagogical reflection. You can think about this as you are developing data collection methods and even when you are collecting data. The key distinction is whether the data you will be collecting allows for nuance among the participants or variables. This does not mean that you will have nuance, but it should allow for the possibility. Second, criteria are shaped by our values and develop into standards of judgement. If we identify criteria such as teacher empowerment, then we will use that standard to think about the action contained in our research process. Our values inform our work; therefore, our work should be judged in relation to the relevance of our values in our pedagogy and practice.

Does Your Timeline Work?

While action research is situated in the temporal span that is your life, your research project is short-term, bounded, and related to the socially mediated practices within your educational context. The timeline is important for bounding, or setting limits to your research project, while also making sure you provide the right amount of time for the data to emerge from the process.

For example, if you are thinking about examining the use of math diaries in your classroom, you probably do not want to look at a whole semester of entries because that would be a lot of data, with entries related to a wide range of topics. This would create a huge data analysis endeavor. Therefore, you may want to look at entries from one chapter or unit of study. Also, in terms of timelines, you want to make sure participants have enough time to develop the data you collect. Using the same math example, you would probably want students to have plenty of time to write in the journals, and also space out the entries over the span of the chapter or unit.

In relation to the examples, we think it is an important mind shift to not think of research timelines in terms of deadlines. It is vitally important to provide time and space for the data to emerge from the participants. Therefore, it would be potentially counterproductive to rush a 50-minute data collection into 20 minutes – like all good educators, be flexible in the research process.

Involve Others

It is important to not isolate yourself when doing research. Many educators are already isolated when it comes to practice in their classroom. The research process should be an opportunity to engage with colleagues and open up your classroom to discuss issues that are potentially impacting your entire educational context. Think about the following relationships:

Research participants

You may invite a variety of individuals in your educational context, many with whom you are in a shared situation (e.g. colleagues, administrators). These participants may be part of a collaborative study, they may simply help you develop

data collection instruments or intervention items, or they may help to analyze and make sense of the data. While the primary research focus will be you and your learning, you will also appreciate how your learning is potentially influencing the quality of others' learning.

Observers

We always tell educators to be public about your research, or anything exciting that is happening in your educational context, for that matter. In terms of research, you do not want it to seem mysterious to any stakeholder in the educational context. Invite others to visit your setting and observe your research process, and then ask for their formal feedback. Inviting others to your classroom will engage and connect you with other stakeholders, while also showing that your research was established in an ethic of respect for multiple perspectives.

Critical friends or validators

Using critical friends is one way to involve colleagues and also validate your findings and conclusions. While your positionality will shape the research process and subsequently your interpretations of the data, it is important to make sure that others see similar logic in your process and conclusions. Critical friends or validators provide some level of certification that the frameworks you use to develop your research project and make sense of your data are appropriate for your educational context. Your critical friends and validators' suggestions will be useful if you develop a report or share your findings, but most importantly will provide you confidence moving forward.

Potential researchers

As an educational researcher, you are involved in ongoing improvement plans and district or systemic change. The flexibility of action research allows it to be used in a variety of ways, and your initial research can spark others in your context to engage in research either individually for their

own purposes, or collaboratively as a grade level, team, or school. Collaborative inquiry with other educators is an emerging form of professional learning and development for schools with school improvement plans. While they call it collaborative inquiry, these schools are often using an action research model. It is good to think of all of your colleagues as potential research collaborators in the future.

Prioritize Ethical Practice

Try to always be cognizant of your own positionality during the action research process, its relation to your educational context, and any associated power relation to your positionality. Furthermore, you want to make sure that you are not coercing or engaging participants into harmful practices. While this may seem obvious, you may not even realize you are harming your participants because you believe the action is necessary for the research process.

For example, commonly teachers want to try out an intervention that will potentially positively impact their students. When the teacher sets up the action research study, they may have a control group and an experimental group. There is potential to impair the learning of one of these groups if the intervention is either highly impactful or exceedingly worse than the typical instruction. Therefore, teachers can sometimes overlook the potential harm to students in pursuing an experimental method of exploring an intervention.

If you are working with a university researcher, ethical concerns will be covered by the Institutional Review Board (IRB). If not, your school or district may have a process or form that you would need to complete, so it would be beneficial to check your district policies before starting. Other widely accepted aspects of doing ethically informed research, include:

Confirm Awareness of Study and Negotiate Access – with authorities, participants and parents, guardians, caregivers and supervisors (with IRB this is done with Informed Consent).

- **Promise to Uphold Confidentiality** – Uphold confidentiality, to your fullest ability, to protect information, identity and data. You can identify people if they indicate they want to be recognized for their contributions.
- **Ensure participants' rights to withdraw from the study at any point.**
- **Make sure data is secured, either on password protected computer or lock drawer.**

Prepare to Problematize your Thinking

Educational researchers who are more philosophically-natured emphasize that research is not about finding solutions, but instead is about creating and asking new and more precise questions. This is represented in the action research process shown in the diagrams in Chapter 1, as Collingwood (1939) notes the aim in human interaction is always to keep the conversation open, while Edward Said (1997) emphasized that there is no end because whatever we consider an end is actually the beginning of something entirely new. These reflections have perspective in evaluating the quality in research and signifying what is “good” in “good pedagogy” and “good research”. If we consider that action research is about studying and reflecting on one’s learning and how that learning influences practice to improve it, there is nothing to stop your line of inquiry as long as you relate it to improving practice. This is why it is necessary to problematize and scrutinize our practices.

Ethical Dilemmas for Educator-Researchers

Classroom teachers are increasingly expected to demonstrate a disposition of reflection and inquiry into their own practice. Many advocate for schools to become research centers, and to produce their own research studies, which is an important advancement in acknowledging and addressing the complexity in today's schools. When schools conduct their own research studies without outside involvement, they bypass outside controls over their studies. Schools shift power away from the oversight of outside experts and ethical research responsibilities are shifted to those conducting the formal research within their educational context. Ethics firmly grounded and established in school policies and procedures for teaching, becomes multifaceted when teaching practice and research occur simultaneously. When educators conduct research in their classrooms, are they doing so as teachers or as researchers, and if they are researchers, at what point does the teaching role change to research? Although the notion of objectivity is a key element in traditional research paradigms, educator-based research acknowledges a subjective perspective as the educator-researcher is not viewed separately from the research. In action research, unlike traditional research, the educator as researcher gains access to the research site by the nature of the work they are paid and expected to perform. The educator is never detached from the research and remains at the research site both before and after the study. Because studying one's practice comprises working with other people, ethical deliberations are inevitable. Educator-researchers confront role conflict and ambiguity regarding ethical issues such as informed consent from participants, protecting subjects (students) from harm, and ensuring confidentiality. They must demonstrate a commitment toward fully understanding ethical dilemmas that present themselves within the unique set of circumstances of the educational context. Questions about research ethics can feel exceedingly complex and in specific situations, educator- researchers require guidance from others.

Think about it this way. As a part-time historian and former

history teacher I often problematized who we regard as good and bad people in history. I (Clark) grew up minutes from Jesse James' childhood farm. Jesse James is a well-documented thief, and possibly by today's standards, a terrorist. He is famous for daylight bank robberies, as well as the sheer number of successful robberies. When Jesse James was assassinated, by a trusted associate none-the-less, his body travelled the country for people to see, while his assailant and assailant's brother reenacted the assassination over 1,200 times in theaters across the country. Still today in my hometown, they reenact Jesse James' daylight bank robbery each year at the Fall Festival, immortalizing this thief and terrorist from our past. This demonstrates how some people saw him as somewhat of hero, or champion of some sort of resistance, both historically and in the present. I find this curious and ripe for further inquiry, but primarily it is problematic for how we think about people as good or bad in the past. Whatever we may individually or collectively think about Jesse James as a "good" or "bad" person in history, it is vitally important to problematize our thinking about him. Talking about Jesse James may seem strange, but it is relevant to the field of action research. If we tell people that we are engaging in important and "good" actions, we should be prepared to justify why it is "good" and provide a theoretical, epistemological, or ontological rationale if possible. Experience is never enough, you need to justify why you act in certain ways and not others, and this includes thinking critically about your own thinking.

Educators who view inquiry and research as a facet of their professional identity must think critically about how to design and conduct research in educational settings to address respect, justice, and beneficence to minimize harm to participants. This chapter emphasized the due diligence involved in ethically planning the collection of data, and in considering the challenges faced by educator-researchers in educational contexts.

Planning Action

After the thinking about the considerations above, you are now at the stage of having selected a topic and reflected on different

aspects of that topic. You have undertaken a literature review and have done some reading which has enriched your understanding of your topic. As a result of your reading and further thinking, you may have changed or fine-tuned the topic you are exploring. Now it is time for action. In the last section of this chapter, we will address some practical issues of carrying out action research, drawing on both personal experiences of supervising educator-researchers in different settings and from reading and hearing about action research projects carried out by other researchers.

Engaging in an action research can be a rewarding experience, but a beneficial action research project does not happen by accident – it requires careful planning, a flexible approach, and continuous educator-researcher reflection. Although action research does not have to go through a pre-determined set of steps, it is useful here for you to be aware of the progression which we presented in Chapter 2. The sequence of activities we suggested then could be looked on as a checklist for you to consider before planning the practical aspects of your project.

We also want to provide some questions for you to think about as you are about to begin.

- Have you identified a topic for study?
- What is the specific context for the study? (It may be a personal project for you or for a group of researchers of which you are a member.)
- Have you read a sufficient amount of the relevant literature?
- Have you developed your research question(s)?
- Have you assessed the resource needed to complete the research?

As you start your project, it is worth writing down:

- a **working title** for your project, which you may need to refine later;
- the **background of the study**, both in terms of your professional context and personal motivation;
- the **aims** of the project;
- the **specific outcomes** you are hoping for.

Although most of the models of action research presented in Chapter 1 suggest action taking place in some pre-defined order, they also allow us the possibility of refining our ideas and action in the light of our experiences and reflections. Changes may need to be made in response to your evaluation and your reflections on how the project is progressing. For example, you might have to make adjustments, taking into account the students' responses, your observations and any observations of your colleagues. All this is very useful and, in fact, it is one of the features that makes action research suitable for educational research.

Action research planning sheet

In the past, we have provided action researchers with the following planning list that incorporates all of these considerations. Again, like we have said many times, this is in no way definitive, or lock-in-step procedure you need to follow, but instead guidance based on our perspective to help you engage in the action research process. The left column is the simplified version, and the right column offers more specific advice if need.

Figure 4.1 Planning Sheet for Action Research

| | |
|---|--|
| My topic of research is about ... | At this stage, you may only have a general idea about the area of study. Writing it down will help. |
| Why do you wish to research this topic | There could be different reasons for this. Perhaps you read or heard something about the topic? Professional reasons may be important here, such as a new responsibility within your institution or attending a professional development course, or it may be that your institution has applied for funding to undertake an action research project. It could also be that you realized you need to improve/change something in your practice. |
| Are your plans realistic, doable, and/or supported? | What possible challenges might you face? A lack of time? Colleagues may not hold the same views as you and could perhaps block the progress of your project. Make a list. |
| Write down a working title. What is your research question or aspect you are intending to study? What do you know and not know about your topic of study? | This may take several attempts. From all your ideas, select the most elegant and focused title which conveys your intentions clearly. Your initial knowledge about the topic can be recorded here. What readings and literature are available that you know of? A conceptual map may be helpful. |
| Who will be involved in the research? What is the timeline? What ethical procedures do you need? | List everyone who will be involved: colleagues, children, parents, external evaluators. Construct a realistic timeline. State briefly what arrangements will need to be made for ethical clearance. |
| Where will I search for literature? | Think about which databases will be most useful for your search. Think about the field of study your research falls into and look for publications related to those fields. Are there any primary sources that will be useful for your research, or will it all be secondary sources? |
| What data do you need to collect? Why do you need each of them? | Make a list of the kind of data you need and next to it justify why you need to collect them and what methods you intend to use. |

| | |
|--|---|
| What are the possible outcomes of my research? | List the possible benefits and outcomes for you, personally and professionally, for the people you teach or work with, and for your institution. You may also think about what knowledge may be generated that could be shared with others. |
| What is your research question? | You may have changed it after completing the previous sections of this grid and if not, you still need to write down what the research question is. Good luck with your project! |

5. Collecting Data in Your Classroom

ESSENTIAL QUESTIONS

- What sort of methodological considerations are necessary to collect data in your educational context?
- What methods of data collection will be most effective for your study?
- What are the affordances and limitations associated with your data collection methods?
- What does it mean to triangulate data, and why is it necessary?

As you develop an action plan for your action research project, you will be thinking about the primary task of conducting research, and probably contemplating the data you will collect. It is likely you have asked yourself questions related to the methods you will be using, how you will organize the data collection, and how each piece of data is related within the larger project. This chapter will help you think through these questions.

Data Collection

The data collection methods used in educational research have originated from a variety of disciplines (anthropology, history, psychology, sociology), which has resulted in a variety of research frameworks to draw upon. As discussed in the previous chapter, the challenge for educator-researchers is to develop a research plan

and related activities that are focused and manageable to study. While human beings like structure and definitions, especially when we encounter new experiences, educators-as-researchers frequently disregard the accepted frameworks related to research and rely on their own subjective knowledge from their own pedagogical experiences when taking on the role of educator-researcher in educational settings. Relying on subjective knowledge enables teachers to engage more effectively as researchers in their educational context. Educator-researchers especially rely on this subjective knowledge in educational contexts to modify their data collection methodologies. Subjective knowledge negotiates the traditional research frameworks with the data collection possibilities of their practice, while also considering their unique educational context. This empowers educators as researchers, utilizing action research, to be powerful agents for change in educational contexts.

Thinking about Types of Data

Whether the research design is qualitative, quantitative or mixed-methods, it will determine the methods or ways you use to collect data. Qualitative research designs focus on collecting data that is relational, interpretive, subjective, and inductive; whereas a typical quantitative study, collects data that are deductive, statistical, and objective.

| Typical Characteristics | Qualitative | Quantitative |
|-------------------------|--------------------------------------|------------------------------------|
| Knowledge | Relational, Interpretive, Subjective | Scientific, Statistical, Objective |
| Reasoning | Inductive | Deductive |
| Data Format | Language | Numbers |
| Sample Size | Small (1-15) | Large |

In contrast, qualitative data is often in the form of language, while quantitative data typically involves numbers. Quantitative researchers require large numbers of participants for validity, while qualitative researchers use a smaller number of participants, and can even use one (Hatch, 2002). In the past, quantitative and qualitative educational researchers rarely interacted, sometimes holding contempt for each other's work; and even published articles in separate journals based on having distinct theoretical orientations in terms of data collection. Overall, there is a greater

appreciation for both quantitative and qualitative approaches, with scholars finding distinct value in each approach, yet in many circles the debate continues over which approach is more beneficial for educational research and in educational contexts.

The goal of qualitative data collection is to build a complex and nuanced description of social or human problems from multiple perspectives. The flexibility and ability to use a variety of data collection techniques encompasses a distinct stance on research. Qualitative researchers are able to capture conversations and everyday language, as well as situational attitudes and beliefs. Qualitative data collection is able to be fitted to the study, with the goal of collecting the most authentic data, not necessarily the most objective. To researchers who strictly use quantitative methods, qualitative methods may seem wholly unstructured, eclectic, and idiosyncratic; however, for qualitative researchers these characteristics are advantageous to their purpose. Quantitative research depends upon structure and is bounded to find relationship among variables and units of measurement. Quantitative research helps make sense of large amounts of data. Both quantitative and qualitative research help us address education challenges by better identifying what is happening, with the goal of identifying why it is happening, and how we can address it.

Most educator-researchers who engage in research projects in schools and classrooms utilize qualitative methodologies for their data collection. Educator-researchers also use mixed methods that focus on qualitative methods, but also use quantitative methods, such as surveys, to provide a multidimensional approach to inquiring about their topic. While qualitative methods may feel more comfortable, there is a methodological rationale for using quantitative research.

Research methodologists use two distinct forms of logic to describe research: induction and deduction. Inductive approaches are focused on developing new or emerging theories, by explaining the accumulation of evidence that provides meaning to similar

circumstances. Deductive approaches move in the opposite direction, and create meaning about a particular situation by reasoning from a general idea or theory about the particular circumstances. While qualitative approaches are inductive – observe and then generate theories, for example – qualitative researchers will typically initiate studies with some preconceived notions of potential theories to support their work.

Flexible Research Design

A researcher's decisions about data collection and activities involve a personal choice, yet the choice of data sources must be responsive to the proposed project and topic. Logically, researchers will use whatever validated methods help them to address the issue they are researching and will develop a research plan around activities to implement those methods. While a research plan is important to conducting valid research in schools and classrooms, a research plan should also be flexible in design to allow data to emerge and find the best data to address research questions. In this way, a research plan is recommended, but data collection methods are not always known in advance. As you, the educator-researcher, interacts with participants, you may find it necessary to continue the research with additional data sources to better address the question at the center of your research. When educators are researchers and a participant in their study, it is especially important to keep an open mind to the wide range of research methodologies. All-in-all educator-researchers should understand that there are varied and multiple paths to move from research questions to addressing those questions.

Mixed Methods

As mentioned above, mixed methods is the use of both qualitative and quantitative methods. Researchers generally use mixed methods to clarify findings from the initial method of data collection. In mixed-methods research, the educator-researcher has increased flexibility in data collection. Mixed methods studies often result in a combination of precise measurements (e.g., grades, test scores, survey, etc.) along with in-depth qualitative data that

provide meaningful detail to those measurements. The key advantage of using mixed methods is that quantitative details enhance qualitative data sources that involve conclusions and use terms such as usually, some, or most which can be substituted with a number or quantity, such as percentages or averages, or the mean, the median, and/or the mode. One challenge to educator-researchers is that mixed methods require more time and resources to complete the study, and more familiarity about both qualitative and quantitative data collection methods.

Mixed methods in educator research, even if quantitative methods are only used minimally, provide an opportunity to clarify findings, fill gaps in understanding, and cross-check data. For example, if you are looking at the use of math journals to better engage students and improve their math scores, it would be helpful to understand their abilities in math and reading before analyzing the math journals. Therefore, looking at their test scores might give you some nuanced understanding of why some students improved more than others after using the math journals. Pre- and post-surveys would also provide valuable information in terms of students' attitudes and beliefs about math and writing. In line with thinking about pre- and post-surveys, some researchers suggest using either qualitative or quantitative approaches in different phases of the research process. In the previous example, pre- and post test scores may quantitatively demonstrate growth or improvement after implementing the math journal; however, the qualitative data would provide detailed evidence as to *why* the math journals contributed to growth or improvement in math. Quantitative methods can establish relationships among variables, while qualitative methods can explain factors underlying those same relationships.

I caution the reader at this point to not simply think of qualitative methodologies as anecdotal details to quantitative reports. I only highlight mixed methods to introduce the strength of such studies, and to aid in moving educational research methodology away from the binary thinking of quantitative vs. qualitative. In thinking about

data collection, possible data sources include questionnaires or surveys, observations (video or written notes), collaboration (meetings, peer coaching), interviews, tests and records, pictures, diaries, transcripts of video and audio recordings, personal journals, student work samples, e-mail and online communication, and any other pertinent documents and reports. As you begin to think about data collection you will consider the available materials and think about aspects discussed in the previous chapter: who, what, where, when, and how. Specifically:

- Who are the subjects or participants for the study?
- What data is vital evidence for this study?
- Where will the data be collected?
- When will the data be collected?
- How will the data be collected?

If you find you are having trouble identifying data sources that support your initial question, you may need to revise your research question – and make sure what you are asking is researchable or measurable. The research question can always change throughout the study, but it should only be in relation the data being collected.

Participant Data

As an educator, your possible participants selection pool is narrower than most researchers encounter – however, it is important to be clear about their role in the data design and collection. A study can involve one participant or multiple participants, and participants often serve as the primary source of data in the research process. Most studies by educator-researchers utilize purposeful sampling, or in other words, they select

participants who will be able to provide the most relevant information to the study. Therefore, the study design relies upon the participants and the information they can provide. The following is a description of some data collection methods, which include: surveys or questionnaires, individual or group interviews, observations, field notes or diaries, narratives, documents, and elicitation.

Surveys

Surveys, or questionnaires, are a research instrument frequently used to receive data about participants' feelings, beliefs, and attitudes in regard to the research topic or activities. Surveys are often used for large sample sizes with the intent of generalizing from a sample population to a larger population. Surveys are used with any number of participants and can be administered at different times during the study, such as pre-activity and post-activity, with the same participants to determine if changes have occurred over the course of the activity time, or simply change over time. Researchers like surveys and questionnaires as an instrument because they can be distributed and collected easily – especially with all of the recent online application possibilities (e.g., Google, Facebook, etc.). Surveys come in several forms, closed-ended, open-ended, or a mix of the two. Closed-ended surveys are typically multiple-choice questions or scales (e.g. 1-5, most likely–least likely) that allow participants to rate or select a response for each question. These responses can easily be tabulated into meaningful number representations, like percentages. For example, Likert scales are often used with a five-point range, with options such as strongly agree, agree, neutral, disagree, and strongly disagree. Open-ended surveys consist of prompts for participants to add their own perspectives in short answer or limited word responses. Open-ended surveys are not always as easy to tabulate, but can provide more detail and description.

Interviews and Focus Groups

Interviews are frequently used by researchers because they often produce some of the most worthwhile data. Interviews allow researchers to obtain candid verbal perspectives through structured or semi-structured questioning. Interview questions, either structured or semi-structured, are related to the research question or research activities to gauge the participants' thoughts, feelings, motivations, and reflections. Some research relies on interviewing as the primary data source, but most often interviews are used to strengthen and support other data sources. Interviews can be time consuming, but interviews are worthwhile in that you can gather richer and more revealing information than other methods that could be utilized (Koshy, 2010). Lincoln and Guba (1985) identified five outcomes of interviewing:

Outcomes of Interviewing

- Here and now explanations;
- Reconstructions of past events and experiences;
- Projections of anticipated experiences;
- Verification of information from other sources;
- Verification of information (p. 268).

As mentioned above, interviews typically take two forms: structured and semi-structured. In terms of interviews, structured means that the researcher identifies a certain number of questions, in a prescribed sequence, and the

researcher asks each participant these questions in the same order. Structured interviews qualitatively resemble surveys and questionnaires because they are consistent, easy to administer, provide direct responses, and make tabulation and analysis more consistent. Structured interviews use an interview protocol to organize questions, and maintain consistency.

Semi-structured interviews have a prescribed set of questions and protocol, just like structured interviews, but the researcher does not have to follow those questions or order explicitly. The researcher should ask the same questions to each participant for comparison reasons, but semi-structured interviews allow the researcher to ask follow-up questions that stray from the protocol. The semi-structured interview is intended to allow for new, emerging topics to be obtained from participants. Semi-structured questions can be included in more structured protocols, which allows for the participant to add additional information beyond the formal questions and for the researcher to return to preplanned formal questions after the participant responds. Participants can be interviewed individually or collectively, and while individual interviews are time-consuming, they can provide more in-depth information.

When considering more than two participants for an interview, researchers will often use a focus group interview format. Focus group interviews typically involve three to ten participants and seek to gain socially dependent perspectives or organizational viewpoints. When using focus group interviews with students, researchers often find them beneficial because they allow student reflection and ideas to build off of each other. This is important because often times students feel shy or hesitant to share their ideas with adults, but once another student sparks or confirms their idea, belief, or opinion they are more willing to share. Focus

group interviews are very effective as pre- and post-activity data sources. Researchers can use either a structured or semi-structured interview protocol for focus group interviews; however, with multiple participants it may be difficult to maintain the integrity of a structured protocol.

Observations

One of the simplest, and most natural, forms of data collection is to engage in formal observation. Observing humans in a setting provides us contextual understanding of the complexity of human behavior and interrelationships among groups in that setting. If a researcher wants to examine the ways teachers approach a particular area of pedagogical practice, then observation would be a viable data collection tool. Formal observations are truly unique and allow the researcher to collect data that cannot be obtained through other data sources. Ethnography is a qualitative research design that provides a descriptive account based on researchers' observations and explorations to examine the social dynamics present in cultures and social systems – which includes classrooms and schools. Taken from anthropology, the ethnographer uses observations and detailed note taking, along with other forms of mapping or making sense of the context and relationships within. For Creswell (2007), several guidelines provide structure to an observation:

Structuring Observations

- Identify what to observe
- Determine the role you will assume – observer or

participant

- Design observational protocol for recording notes
- Record information such as physical situation, particular events and activities
- Thank participants and inform them of the use of and their accessibility to the data (pp. 132– 134)

As an educator-researcher, you may take on a role that exceeds that of an observer and participate as a member of the research setting. In this case, the data sources would be called *participant observation* to clearly identify the degree of involvement you have in the study. In participant observation, the researcher embeds themselves in the actions of the participants. It is important to understand that participant observation will provide completely different data, in comparison to simply observing someone else. Ethnographies, or studies focused completely on observation as a data source, often extend longer than other data sources, ranging from several months to even years. Extended time provides the researcher the ability to obtain more detailed and accurate information, because it takes time to observe patterns and other details that are significant to the study. Self-study is another consideration for educators, if they want to use observation and be a participant observer. They can use video and audio recordings of their activities to use as data sources and use those as the source of observation.

Field Diaries and Notes

Utilizing a field diary, or keeping field notes, can be a very effective and practical data collection method. In purpose, a

field diary or notes keep a record of what happens during the research activities. It can be useful in tracking how and why your ideas and the research process evolved. Many educators keep daily notes about their classes, and in many ways, this is a more focused and narrower version of documenting the daily happenings of a class. A field diary or notes can also serve as an account of your reflections and commentary on your study, and can be a starting place for your data analysis and interpretations. A field diary or notes are typically valuable when researchers begin to write about their project because it allows them to draw upon their authentic voice. The reflective process that represents a diary can also serve as an additional layer of professional learning for researchers. The format and length of a field diary or notes will vary depending on the researching and the topic; however, the ultimate goal should be to facilitate data collection and analysis.

Narratives

Data narratives and stories are a fairly new form of formalized data. While researchers have collected bits and pieces of narratives in other forms of data, asking participants to compose a narrative (either written, spoken, or performed) as a whole allows researchers to examine how participants embrace the complexities of the context and social interactions. Humans are programmed to engage with and share narratives to develop meaningful and experiential knowledge. Educator autobiographies bring to life personal stories shaped by knowledge, values, and feelings that developed from their classroom experiences. Narrative data includes three primary areas: temporality, sociality, and place (Clandinin & Conolley, 2000). In terms of temporality, narratives have a past, present, and future because stories are time-based and transitional. Sociality highlights the social relationships in narratives as well as the personal and moral dispositions. Place includes the spaces where the

narratives happen. Furthermore, bell hooks (1991) notes that narratives, or storytelling, as inquiry can be a powerful way to study how contexts are influenced by power structures, often linking and intersecting the structural dynamics of social class, race, and gender to highlight the struggle.

Documents

Documents provide a way to collect data that is unobtrusive to the participant. Documents are unobtrusive data because it is collected without modifying or distracting the research context when gathered. Educational settings maintain records on all sorts of activities in schools: content standards, state mandates, student discipline records, student attendance, student assessments, performance records, parental engagement, records of how teachers spend PTO money, etc. Documents often provide background and contextual material providing a snapshot of school policies, demographic information, ongoing records over a period of time, and contextual details from the site of the research study. Documents can be characterized similarly to historical research, as primary and secondary. Examples of primary materials are first-hand sources from someone in the educational context, such as minutes from a school board or faculty meeting, photographs, video recordings, and letters. Examples of secondary sources typically include analysis or interpretations of a primary source by others, such as texts, critiques, and reviews. Both types of sources are especially valuable in action research.

Elicitation Methods

We have talked about several methods of data collection that each have useful ways of documenting, inquiring, and thinking about the research question. However, how does a researcher engage participants in ways that allow them to demonstrate what they know, feel, think, or believe? Asking participants directly about their thinking, feeling, or beliefs will only take you so far depending on the comfort and

rapport the participant has with the researcher. There are always a variety of hurdles in extracting participants' knowledge. Even the manner in which questions are framed and the way researchers use materials in the research process are equally important in getting participants to provide reliable, comparable, and valid responses. Furthermore, all individuals who participate in research studies vary in their ability to recall and report what they know, and this affects the value of traditional data collection, especially structured and semi-structured interviewing. In particular, participants' knowledge or other thinking of interest may be implicit and difficult for them to explicate in simple discussion.

Elicitation methods help researchers uncover unarticulated participant knowledge through a potential variety of activities. Researchers will employ elicitation methods and document the participants' actions and typically the description of why they took those particular actions. Educators may be able to relate the process of elicitation methods to a "think aloud" activity in which the researcher wants to record or document the activity. Elicitation methods can take many forms. What follows are some basic ideas and formats for elicitation methods.

Brainstorming/Concept Map

Most educators are probably familiar with the process of brainstorming or creating a concept map. These can be very effective elicitation methods when the researcher asks the participant to create a concept map or representation of brainstorming, and then asks the participant to explain the connections between concepts or ideas on the brainstorming or concept map.

Sorting

Sorting provides an engaging way to gather data from your participants. Sorting, as you can imagine,

involves participants sorting, grouping, or categorizing objects or photographs in meaningful ways. Once participants have sorted the objects or photographs, the researcher records or documents the participant explaining why they sorted or grouped the objects or photographs in the way that they did. As a former history teacher, I would often use sorting to assess my students' understanding of related concepts and events in a world history class. I would use pictures too as the means for students to sort and demonstrate what they understood from the unit. For broader discussion of elicitation techniques in history education see Barton (2015).

Listing/ Ranking

Listing can be an effective way to examine participants' thinking about a topic. Researchers can have participants construct a list in many different ways to fit the focus of the study and then have the participants explain their list. For example, if an educator was studying middle school student perceptions of careers, they could ask them to complete three lists: Careers in Most Demand; Careers with Most Education/Training; Careers of most Interest.

| Careers in Most Demand | Careers with Most Education/ Training | Careers of Most Interest |
|------------------------|--|--------------------------|
| 1. | 1. | 1. |
| 2. | 2. | 2. |
| 3. | 3. | 3. |
| 4. | 4. | 4. |
| 5. | 5. | 5. |

Then, once participants have filled out the lists, the most important part is documenting them explaining their thinking, and why they filled out the lists the way they did. As you may imagine, in this example, every participant would have a list that is different based on their personal interests.

Recall

Researchers can also elicit responses by simply giving participants a prompt, and then asking them to recall whatever they know about that prompt. Researchers will have the participants do this in some sort of demonstrative activity. For example, at the end of a world history course, I might ask students to explain what “culture” means to them and to explain their thinking.

Re-articulation (writing or drawing)

A unique way to engage participants in elicitation methods is to have them write about, rewrite, or draw visual representations of either life experiences or literature that they have read. For example, you could ask them to rewrite a part of the literature they did not like, add a part they thought should be there, or simply extend the ending. Participants can either write or draw these re-articulations. I find that drawing works just as well because, again, the goal is to have participant describe their thinking based on the activity.

Scenario Decision-Making

Elicitation methods can also examine skills.

Researchers can provide participants scenarios and ask them to make decisions. The researchers can document those decisions and analyze the extent to which the participant understands the skill.

Document, Photograph, or Video Analysis

This is the most basic elicitation in which the researcher provides a document, photograph, or video for the participant to examine. Then, the researcher asks questions about the participants' interpretations of the document, photograph, or video. One method that would support this sort of elicitation is to ask the participants to provide images from their everyday words. For example, asking students to document the literacy examples in their homes (i.e., pictures of calendars, bookshelves etc.). With the availability of one-to-one tech, and iPads, participant documentation is easier.

There are many more methods of data collection also, as well as many variations of the methods described above. The goal for you is to find the data collection methods that are going to give you the best data to answer your research question. If you are unsure, there is nothing wrong with collecting more data than you need to make sure you use effective methods – the only thing you have to lose is time!

Use of Case Studies

Case studies are a popular way for studying phenomena in settings using qualitative methodology. Case studies typically encompass qualitative studies which look closely at what happens when researchers collect data, analyze the data, and present the results. Case studies can focus on a single case or examine a phenomenon across multiple cases. Case studies frame research in a way that allows for rich description of data and depth of analysis.

An advantage of using case study design is that the reader often identifies with the case or phenomena, as well as the participants in the study. Yin (2003) describes case study methodology as inquiry

that investigates a contemporary phenomenon within its authentic context. Case studies are particularly appropriate when the boundaries and relationship between the phenomenon and the context are not clear. Case studies relate well with the processes involved in action research. Critics of action research case studies sometimes criticize the inevitable subjectivity, just like general criticisms of action research. Case studies provide researchers opportunities to explore both the how and the why of phenomena in context, while being both exploratory and descriptive.

We want to clarify the differences between methodologies and methods of research. There are methodologies of research, like case study and action research, and methods of data collection. Methodologies like ethnography, narrative inquiry, and case study draw from some similar methods of data collecting that include interviews, collection of artifacts (writings, drawings, images), and observations. The differences between the methodologies include the time-frame for research; the boundaries of the research; and the epistemology.

Triangulation of Data

Triangulation is a method used by qualitative researchers to check and establish trustworthiness in their studies by using and analyzing multiple (three or more) data collection methods to address a research question and develop a consistency of evidence from data sources or approaches. Thus, triangulation facilitates trustworthiness of data through cross verification of evidence, to support claims, from more than two data collection sources. Triangulation also tests the consistency of findings obtained through different data sources and instruments, while minimizing bias in the researcher's interpretations of the data.

If we think about the example of studying the use of math journals in an elementary classroom, the researcher would want to collect at least three sources of data – the journal prompts, assessment scores, and interviews. When the researcher is analyzing the data, they will want to find themes or evidence across all three data sources to address their research question. In a very basic analysis,

if the students demonstrated a deeper level of reflection about math in the journals, their assessment scores improved, and their interviews demonstrated they had more confidence in their number sense and math abilities – then, the researcher could conclude, on a very general level, that math journals improved their students' math skills, confidence, or abilities. Ideally, the study would examine specific aspects of math to enable deeper analysis of math journals, but this example demonstrates the basic idea of triangulation. In this example, all of the data provided evidence that the intervention of a math journal improved students' understanding of math, and the three data sources provided trustworthiness for this claim.

Data Collection Checklist

1. Based on your research question, *what data might you need?*
2. What are the *multiple ways* you could collect that data?
3. How might you *document this data*, or organize it so that it can be analyzed?
4. What methods are most *appropriate for your context and timeframe?*
5. How much time will your data collection require? How much time can you allow for?
6. Will you need to create any data sources (e.g., interview protocol, elicitation materials)?
7. Do your data sources all logically support the research question, and each other?
8. Does your data collection provide for *multiple perspectives?*

9. How will your data *achieve triangulation* in addressing the research question?
10. Will you need more than three data sources to ensure triangulation of data?

6. Analyzing Data from Your Classroom

ESSENTIAL QUESTIONS

- What are the best ways to organize and analyze your data?
- What methods of data analysis will be most effective for your study?
- What claims can you make after analyzing your data?
- How do your claims contribute to the knowledge base?

You've determined the methods for data collection and then collected that data for your action research project. It is now time to conduct the analysis of your data, which precedes drawing conclusions and sharing your findings. During your action research project, you have been informally analyzing your data and now you can formally analyze to develop findings and reflect on their implications for practice. This will also provide an opportunity to identify unanswered questions and possible new directions. As an action researcher, you will create a coherent and reliable story from all the data collected. This is a key part of the professional development or professional learning aspect of action research. As an action researcher, you are looking to create meaning from your practice by utilizing rich descriptions and narratives, and you are

developing expertise by examining situations closely and analyzing them.

Beginning the Meaning Making Process

Before you begin your data analysis, you should revisit the intended goals of the project. Equally, you should think about your research question and reacquaint yourself with your literature review to clearly envision what you have been investigating and why. The goal of data analysis is to identify themes and patterns to provide robust evidence for any claims you are able to make from your findings. You will need to look at the data you have collected from several sources and relate these to your original, expected, outcomes. Of course, you will also be mindful of unexpected outcomes which may be of significance to your study too. Your conclusions should relate to the original intended objectives of the study. Again, your literature review will also help with the analysis, and it will provide distinctions in terms of what we know and don't know as a field of study. Your findings should either confirm previous literature or provide new knowledge in relation to previous literature.

During this stage of the project, it is also important for you to reflect on the research process itself. Did your project go as planned? What would you do differently? What were the biggest challenges? For those interested in your study, they will be interested in knowing about your challenges, as well as your successes.

Organizing your Data

You will want to make a note of everything you possibly can when you collect data. As you organize your data, take a look at the notes or personal journal you have kept during your data collection period. Your notes may reveal that you have initiated important data analysis in the time and space of collecting the data. This sort of analysis could be personal notes on the themes which related to your original research aims and questions. You may have even made determinations about whether to gather additional data. More importantly, you may have noted some unanticipated themes or

ideas that emerged during data collection. I think it is valuable to put these things to the front of your mind as you organize your data and begin the analysis stage.

Analysis and Presentation of your Data

I would like to address some general issues related to analyzing and presenting your data. Here are links to specific examples of data analysis in four action research articles, in the journal *Networks: An Online Journal for Teacher Research*. These are not necessarily ideal examples, but they provide a variety to spark thinking about your own study and discussion among your classmates.

1. *The Impact of Math Vocabulary on Conceptual Understanding for ELLs.* V. Valley. (2019)

2. *Effects of Game-Based Learning on Attitude and Achievement in Elementary Mathematics.* K. White & L. McCoy. (2019)

3. *Shuffle Lit!: Using iPod Shuffles to Encourage Literacy Experiences at Home.* A. Hover. (2018)

4. *Close Reading in the Urban Classroom: A Teacher's Introspection.* S. Nelson. (2019)

5. *The Effect of Flexible Small Groups on Math Achievement in First Grade.* D. Bender & T. Craft. (2016)

6. *A Teacher's Inquiry into Bringing in Biliteracy in a Fifth-Grade English-Only Classroom.* S. Abraham. (2016)

Using quantitative data

You may have collected some quantitative data to provide demographic, contextual, or academic background for your study. Quantitative data helps support, supplement, and complement the qualitative data you have collected. While it is likely that you have not collected a massive amount of quantitative data, any amount will support a stronger argument. You should be able to analyze and represent the quantitative data using tables or charts. Computer software, such as Microsoft Excel, is suitable for this purpose, and can even handle basic correlations between multiple sets of data (e.g., gender and test scores). If an action research project involves several sites and the data are extensive, you may consider using a statistical package, such as IBM's SPSS. Your quantitative data can be presented in charts and graphs developed by these programs. Including charts and graphs is worthwhile for two reasons. First, a visual representation is often easier for many readers to understand when digesting data-based information. Second, visual representations break up continuous narratives which can be useful when conveying a considerable amount of numerical data and the subsequent correlations. Visual representations can also be an effective way to present qualitative data, or to at least

give the reader a glimpse or preview of the data as a whole representation before reading the narrative.

Using qualitative data

Since your action research project was probably located within your professional context and focused on your practice, you likely explored attitudes, behaviors, and feelings that required collecting qualitative data. Most of this data will be in the form of descriptive text or short answer text, which you will need to analyze and interpret. For qualitative data, analysis of the text will require you to develop an analytical framework to use as the basis of analysis. This framework can also be subjective, so being clear and upfront about your framework is important for validity and reliability. If your data collection resulted in a large amount of descriptive text, it may seem overwhelming to analyze. This is quite normal for a qualitative study and having a lot of data means that you will have plenty to work from. If you have a considerable amount of descriptive data, you could use computer software (as outlined later in this chapter) which is relatively simple to use.

Transcription of your data is something that is often overlooked, or avoided, for several reasons. For some types of data collection (e.g., interviews, focus groups, discussions, etc.) it is useful to have the recording transcribed so that you can analyze the text more easily than listening to the recording. Transcribing is often avoided because of time constraints (or because the researcher cannot afford to have someone transcribe for them). However, if you are going to analyze the data, you should not think of it as purely transcription – it is your first opportunity to engage with the data. This will facilitate a more efficient process of analysis as it will more than likely be the second time you have engaged with the data. If you have previewed or already experienced the data, to save time you might transcribe only the parts that are pertinent to the study or your interest.

Analyzing qualitative data

For better, or worse, there is no universally correct way to analyze qualitative data; however, it is important to be systematic in your method of analysis. As I mentioned earlier, your data analysis probably started initially during your data collection. The questions you asked, the frameworks that you used, and the types of documents you collected would have provided some themes and categories that naturally developed as part of this process. I have suggested to new researchers a step-by-step approach to help them get started:

1. **Organize your data.** Begin by listing the different sets of data you have collected, show how they are related, and how they will support each other (triangulation).
2. **Read the content.** You need to read the data, probably several times, to develop a sense of what the data are indicating. All your data – observation notes, field diaries, policy documents and so on – need to be looked at. Common words and themes should start to emerge.
3. **Highlight relevant sections and aspects of the data.**
4. **Develop categories to sort evidence.** As you examine the data you will need to use actual evidence (numbers, actual quotes, artifacts, etc.) from your data to support your claims. You want these pieces of evidence to be the most vivid or clear representation for the categories you develop. For example, if you interviewed fifteen students and twelve of the interview transcripts provided evidence that the students' understanding had grown due to your instructional intervention, you would want to note that twelve of fifteen students interviewed demonstrated growth in understanding, and possibly provide a quote or sample of how this was demonstrated from one of those twelve students. This sort of evidence enhances the trustworthiness of your findings.

5. **Code your data.** Codes will develop from the categories you use to sort the evidence you find in the range of data. Codes also help you when you do a second or third analysis of the data as it guides your examination of the data. (Coding is discussed later in this chapter.)
6. **Review and narrow the codes.** You may begin with a lot of initial codes, but you will want to narrow these to the most significant, well-evidenced, or best triangulated data. Most likely, these narrow codes will become the significant themes to report on your study.
7. **Interpret your findings.** Once you have narrowed your codes, and have evidence in place to support those codes, it is time to interpret the data and develop meaning within the context of your study, and field. This is where your literature review will be useful again.
8. **Validate the findings.** Validation, in addition to this process (see figure 6.1 below), can take many forms. In previous chapters, I had discussed using critical friends to confirm the validity of your interpretations.
9. **Create report and plan dissemination.**

A framework for qualitative data analysis and interpretation

If you are feeling a bit overwhelmed by the amount of qualitative data you collected, you may find Creswell's (2009) framework to analyze and interpret qualitative data useful (See figure 6.1).



Figure 6.1 Qualitative Data Analysis, interpreted from Creswell (Creswell, 2009, p. 185)

Similarly to above, Creswell also proposes a step-by-step approach to provide practitioners with a guide to undertake action research. I have summarized this in the following section.

Step 1. Organize the data for analysis. You will need to transcribe interviews, scan material, type up your notes, and sort or arrange the different types of data.

Step 2. Read all the data thoroughly. Get a general sense of the data and reflect on their overall meaning. You may have received an initial impression from the data collection, but make notes in the margins or spaces and record any other initial thoughts at this stage.

Step 3. Begin detailed coding and analysis. Coding organizes the material into meaningful chunks of text. When coding, think about:

- code based on previous literature and common sense;
- code what is surprising and unanticipated;
- code for the unusual which may be of conceptual interest to readers.

You may want to hand-code the data, use highlighting colors, or cut and paste text segments onto cards. You may also use a computer software package to help to code, organize and sort the information (e.g., NVivo)

Step 4. Codes should be representative of the

categories, topic, setting, or people that are part of the analysis. Creswell suggests generating 5-7 categories. These will be supported with quotations and specific evidence from the data and may represent headings in your report.

Step 5. Decide how you will represent the codes, themes, and descriptions in the narrative. The narrative will summarize the findings from the analysis. This could be a discussion that outlines the project chronologically, a detailed discussion of several themes (including sub-themes, specific illustrations, multiple perspectives from individuals, and quotations), or a discussion with interconnecting themes. Visuals, graphs, figures, or tables are also useful to support the discussion.

Step 6. This final step involves making an interpretation or deriving meaning from the data. Meaning might come from, but is not limited to, lessons learned from the data. Meaning can also be derived when comparing findings to the literature or theories from the literature review.

Positionality and qualitative data

When analyzing qualitative data, the issue of your own positionality will need to be addressed. Positionality was mentioned in a previous chapter; however, addressing your positionality involves how your own social identity and experiences may impact your interpretation of the data. For example, an educator-researcher may have complex identities that they need to be aware

of when they are analyzing the data. As a privileged white male with a terminal degree of education, I have to realize I may not fully relate to the experiences of many of my students, and this is important if I am analyzing the attitudes and beliefs of my students. I need to keep that under consideration throughout the research process, but especially as I deriving meaning from the perspectives of my students. Therefore, positionality is very important for an educator-researcher who is planning and implementing action in a classroom, while they are also a teacher. It is also important to consider the possible impact of being an educator-researcher and acknowledge the possible influence this may have on the interpretations they make and any bias which may influence the research process. Qualitative research is interpretive research with the researcher typically involved in a sustained and intensive experience with the participants, which opens up a range of potential ethical and personal issues into the qualitative research process.

Many action research reports include a section on positionality, in which the researchers write a narrative describing their positionality and keep that visible as they analyze data. Below are some questions regarding what would constitute a positionality statement:

Positionality Statements

- Who am I? (Including demographics, epistemologies and philosophies, journey in education, etc.)
- What do I believe about teaching/learning?
- What do I believe about this topic?
- What are my expectations of this study?

- What are my connections or dis-connections with the participants?
- What are my experiences with the context of this study?

Analysis with computer software

It is now common for data to be analyzed using computer software. However, as Mertler (2008) notes, it is a misconception to think that the software will do the analysis, as data analysis still requires the use of inductive logic, and therefore, advanced technologies cannot take the place of the human brain. Computer software primarily helps researchers organize and store data. Software such as NVivo can also provide very efficient systems for coding a lot of data, as well as many different types of data, including social media and video. Software like NVivo can be expensive for an educator-researcher. There are several free and/or cheaper applications and software that provide many of the same features.

Coding

Coding your data is such an important part of the analysis process, I want to devote a bit more discussion to the process. Simply put, coding entails identifying the main themes and patterns within your data. Coding is meant to help you conceptualize and condense your data into meaningful and manageable chunks from which to make conclusions. Coding data can take many shapes and forms. Regardless of how you choose to code your data, it is important to keep your research goals and research questions in the forefront of your mind. After immersing yourself in your data sources, it is possible to feel somewhat overcome by thinking and possibilities sparked by the data. This feeling may be caused by one of two issues you will have to deal with in your analysis. First, it is possible you may think that nearly everything you have collected is relevant and significant to the study, which could lead

to some stress in how to determine what to focus on, or what is most significant. Coding should help reduce this stress by bringing patterns and themes to the forefront to help you prioritize some aspects of the data, and make it feel much more manageable. Once you begin to realize you are coding only those things which are relevant, you will ease the stress and begin to enjoy the analysis and coding process. Second, coding can be taxing work because of the constant processing, categorizing, and depth of thinking. Like it is suggested when revising writing, take regular breaks to maintain your full concentration, and in the case of research, to also review your coding criteria.

Using Evidence and Generating Knowledge

The main purpose of gathering data, through a research process, is to provide evidence. In order to provide evidence, you need to analyze the data you have collected. Again, it is important to remember the starting place of your inquiry, and what you are looking for in the study. You began with goals at the start of your research and mapped out your data collection strategically, now you have the data which will provide evidence for articulating your claims and developing pedagogical theories.

Regardless of the type of data you have collected, quantitative data or qualitative data or a combination of the two, ultimately the significance and impact of your research will depend on the quality of data you have collected, the interpretations you make, and your reflections and conclusions. Therefore, the significance of your study will depend upon the quality of the data you have collected and depth of your data analysis.

While you are engaged in data analysis, it might be useful to highlight the data that could be used as evidence to support your claims when you share your research. In the past, I have color coded different types of evidence.

So, what do we mean when we say provide evidence? When researchers provide evidence, they are providing pieces of data that support their claims about what their study did or did not demonstrate. In the next chapter, we will discuss how to share or

report your findings. When you share or report you can think of it as an argument that you are making about your findings and subsequent claims. The data is used as evidence to support your claims and strengthen your argument. It is important to remember that to develop valid claims to knowledge, you will need to support your claims with evidence using relevant parts of your data. Therefore, evidence may take the form of survey results, quotes or extracts from interview transcripts, selections from your classroom observation notes, artifacts, photographs, and examples of students' work.

Generating Knowledge

The purpose of research is to generate new knowledge. As an educator and researcher, the knowledge you produce will be based on your practice. Once you have findings and claims, this will most likely affect your practice. You will articulate knowledge that is generated from how your research has affected your practice and contemplate what significance it may have for other practitioners. This process amounts to you building personal theories about what you have done and demonstrated in your study. Therefore, your theories will emerge from your practice and this will contribute new knowledge to the existing knowledge base. Your data will provide illustrative examples of what happened in your classroom and you will cite relevant evidence. When you develop knowledge from your study, the claims you make and the theories you formulate are original, as you have employed your own critical thinking skills and informed judgement. Your critical thinking and informed judgement are demonstrated in the evidence you provide to validate your claims to knowledge.

Creating Trustworthy Claims to Knowledge

Your research findings and claims to knowledge are much more impactful if demonstrated as trustworthy. Action research is often conducted in collaborative teams, involving communities of educator researchers. Collaborative teams have built in opportunities to increase trustworthiness of studies. Having multiple people make interpretations of the same data creates

trustworthiness through common understandings, making the findings more representative. The trustworthiness of research is also based on readers or consumers of your research accept your claims to knowledge. It is scary for many to think they need to validate claims to knowledge, and readers or consumers will critically evaluate their claims. As mentioned in previous chapters, trustworthiness can be accomplished methodologically, and when you report or share your findings you need to simply articulate your methods for trustworthiness. For example:

Achieving Trustworthiness

1. Articulate your procedures clearly;
2. Explain how you conducted your research thoroughly;
3. Describe the robustness of your data collection methods;
4. Make clear how triangulation was achieved.

Expect to be challenged on any aspect of your research claims. This is where validation meetings with different groups of people are useful, to have them consider their research processes and findings from different perspectives both during their research and at the conclusion of the project. When you report or share your research, you should include details of your validation meetings and any developments that resulted from these meetings.

Critical Friends can also be useful in regard to trustworthiness. When you establish the project recruit, Critical Friends. Explain that their role is to evaluate all aspects of the research by challenging your assumptions and considering ways to reduce subjectivity and

ethical issues. Critical Friends can be helpful in thinking about all aspects of your research, even the implications, usefulness, and replicability of your research. You can utilize Critical Friends either individually or as a group to provide formative feedback at different points of the research.

Data Analysis Checklist

1. What is your positionality in regard to the data?
How will it affect your analysis?
2. How will you organize and prepare your *raw data* for analysis?
3. Read and engage with all of your data.
4. Code. What themes or categories are emerging across the data?
5. What descriptions will you use to define and characterize your codes?
6. Are the codes and/or themes interrelated? Are there sub-codes?
7. How will you represent codes in the final report?
8. What theories can you use to interpret the codes?
9. What do your themes, codes, and descriptions mean in relation to your research question(s)?
10. Would a Critical Friend or colleague's review of your analysis add to the trustworthiness of the study?

7. Let it Be Known! Sharing your Results

ESSENTIAL QUESTIONS

- What are the best ways to share my findings?
- Why should I share my work at a conference?
- What are the key components of a report detailing your findings?

Many action researchers are not expected to share their findings or produce written reports, yet it is a useful endeavor for not only the educator-researcher, but also for colleagues in their related fields. For those who are compelled or required to share their findings, Hopkins (2003, 140) provides some guidance, asserting that all action researchers need to share their data and share it in a way that:

- the study could be replicated in another context;
- the evidence used to generate claims or action is clearly documented;
- the action taken as a result of the research is

tracked;

- the findings are accessible to the consumer and relatable to their practice.

I personally believe it is important to formally share your work one way or another, or at least prepare it to be shared. This process helps you think deeply and concisely about what you have researched, what your findings were, and what the significance is for you and your colleagues. When you prepare your work for public consumption, you add another layer of scrutiny and validity to your thinking and editing process.

Action researchers can share their findings in several ways that colleagues and other consumers of research will be able to engage with their work. The three following ways are the most common paths for educator-researchers to share their work:

1. Written Report or Article

- Develop a report for personal documentation or to be shared with colleagues.
- Write an article summarizing your research and its significance to the field.

2. Presentation

- Local, State, Regional, National, or International Conference
- District or School-Wide Professional Learning Session or Workshop
- Research Symposium

3. Web-based Contribution

- Webinar
- Blog
- Personal Website

Writing a Report or Article

Regardless of the purposes for writing your report or article, there are a few factors to consider as you begin to write. Remember, the purpose of action research is to improve your practice and/or implement change, based on the findings of your research, as part of professional learning and development as an educator. As mentioned in previous chapters, your goal as an action researcher is not to make generalizable claims, but to share your research with other educators who want to learn from it, develop a similar study, or use your findings to improve their own teaching in a similar context. Whether it is a report that you share on your own, or an article accepted, edited, and published by a journal or magazine, the important part is to share your findings and contribute to the knowledge base.

Before you begin, the primary task is to consider the audience you are addressing and the requirements and the purpose of your report or article. An article usually has a specific audience and purpose. For example, if I submit an article to the *Elementary Social Studies Journal*, then I am trying to inform elementary teachers about my findings in social studies and I am providing pedagogical insights to them. However, reports can have several purposes depending on the intent and audience. Reports can be for the purpose of:

- Reporting to Grant or External Funding Agency;
- Completing a thesis or dissertation;
- Contributing to a Pedagogical or Educational Database;
- Documenting for Personal, Administrative, or District-Level Record.

Regardless of the purpose, it is important to demonstrate a clear and consistent understanding of the issues you have researched. With the exception of reports to some grant or external funding agencies (as they may require formal writing or templates), when reporting on your action research, the quality of your writing can be enhanced by writing in an authentic and personal style. I have always felt that reporting action research is often powerful for one's own professional learning and development because of the personal nature of the writing. It may be useful to think about it as you are reporting your own story, based on your experiences and collaborations with other people.

When writing a report or article you will want to have representations of the following sections:

- **Problematization of your Topic** (Why is your topic important to you or the field?)
- **Literature Review and Underlying Theories** (What do we know and not know?)
- **Methodology** (How was your study structured, what data was collected, and how was data analyzed?)
- **Summary of Findings** (What were the predominant themes, codes, patterns, or meaningful consequences of the study?)
- **Discussion of Findings' Significance** (How do your findings compare to the literature?)
- **Implications of Findings for Practice** (How will your findings impact your practice?)

These sections will help you think about the important aspects of

your study, as well as the aspects that will be of interest to potential readers.

Imagine the Reader

As an educator-researcher you can imagine many of your colleagues as potential readers of your work. Imagining potential readers is a useful strategy to utilize as you write your report. In this vein, and as you think about the aforementioned sections, the following considerations provide further guidance in the writing process:

- Always provide the background to your study, your context, and your positionality as an educator-researcher. Readers will potentially relate to your study and more easily apply the findings to their own context.
- Clearly present your aims, intentions, and purposes to situate your study and present your findings within the context of what you have set out to achieve.
- Do not be afraid to describe the process, success and challenges, as readers appreciate realism and honesty.
- Write clearly and concisely so others may be able to replicate the study.
- Write in first person if it feels more natural and accurate to the study.
- Readers may not be knowledgeable about your topic. Be concise and explain all aspects of your study in clear, simple language, and explain any educational jargon to be clear about its meaning.
- It is easier to read text with subheadings. Use subheadings when possible.

Since your study will likely be an inquiry into your own practice, remember our discussions from other chapters related to subjectivity:

- Acknowledge your own beliefs, prior assumptions, and values

as part of your positionality or bias statement.

- Acknowledge any experiences that will relate directly to the study and your interpretations of the data.
- Discuss any ethical issues and how you addressed them.

Presentations of Action Research

There are many ways for educator researchers to present their findings. Some educator researchers present their research findings to colleagues and others at discipline-specific conferences before writing their final reports, as they believed that the preparation for the presentation helped to bring their thoughts together. Many others present their research findings after they have written out their reports, and still, many other researchers do not write a formal report, but instead disseminate their research through various presentations in other ways. These different methods of presentations all serve the purpose of bringing their ideas together and reflecting on them before sharing their work with colleagues and others. Here are some examples of presentations.

Conference presentations

A primary way for academic researchers to disseminate their research is through conference presentations at either the local, state, regional, national, or international level. I encourage educator-researchers to do the same, as these are some of the best ways to share your research with engaged and captivated audiences who attended the conference specifically to find out about new research. Similar to writing an article for a specific journal, many conferences will have a disciplinary or developmental level focus that will allow you to present your work to the most interested audience.

District or school-wide professional learning session or workshop

As an educator in a school context, your districts and schools will undoubtedly offer professional learning opportunities or workshops. Educators in the district or

school are often encouraged to present at these events, especially if you are researching a new initiative implemented by the district or school.

Research symposium

If you and some other colleagues have all done action research studies, or maybe a group of colleagues researched the same topic, it would be appropriate to create a research symposium to share your work. These can be formal or informal, but they are a way to have a conference-like setting focused on a specific topic and for specific audience.

Web-Based Contributions

Many educator researchers are simply and effectively sharing their research online. There are many ways to share your research online, including some ways that would be in combination with writing an article, report, or sharing at a conference on an organization's website. However, the most common ways for individual educator researchers to share their work is through providing a webinar, contributing to a blog, or uploading to a personal website. These online formats all provide a way for educator researchers to present their work and reflect on it with the potential to receive feedback from others. Below are some journals specifically focused on publishing education-based action research:

Action Research Publications

- **Action Research** – a print-based, international, interdisciplinary, peer reviewed, quarterly published refereed journal which is a forum for the development of the theory and practice of action research
<https://journals.sagepub.com/home/arj>
- **Educational Action Research** – Supported by Collaborative Action Research Network (CARN) a print-based peer reviewed journal.
<https://www.tandfonline.com/toc/reac20/current>
- **Journal of Teacher Action Research** – an open-access,

online, international journal that publishes peer-reviewed articles and lesson plans written by teachers and researchers to inform classroom practice.

<http://www.practicalteacherresearch.com/>

- ***Inquiry in Education*** – a online, peer reviewed international journal of action research in education and related fields. <https://digitalcommons.nl.edu/ie/>
- ***Networks: An Online Journal for Teacher Research*** – offers a place for sharing reports of action research, in which teachers at all levels, kindergarten to postgraduate, are reflecting on classroom practice through research ventures.

<https://newprairiepress.org/networks/>

Concluding Thoughts

As we discussed in Chapter 1 of this book, Action Research is a cycle—the process is ongoing, and for many teachers, once you engage in Action Research, it becomes difficult to stop pursuing new and interesting questions in your classroom. As you answer one question, new ideas and issues emerge, prompting a new modification, and so on. Action Research, as such, is not finite. For teacher action researchers, disseminating your work is an important step in this cycle, as it offers you an opportunity to contribute your new knowledge to the field at-large, and it can open the door to new learning opportunities for both you and your colleagues. Please do not get stressed out about the dissemination portion of this cycle. Simply find the best way for you to share your hard work and accomplish your intended goals. The important part is to share your work and share in a way that allows you to deeply reflect, celebrate your progress, get feedback, and contemplate your next steps or project. The best teachers are lifelong learners, and Action Research allows you the space to continue the deep learning that is necessary in education. Hopefully, this book has provided a vehicle to engage in a cycle of research in your classroom.

The following supplemental chapter contains a full-length vignette from a high school English teacher. The vignette details the steps to an action research project using a real-life example from her classroom. While every project will look different, the vignette serves as an outline for how action research can develop from your classroom wonderings, and it includes the detailed steps the teacher took to fulfill all the parts of action research as outlined in this book.

8. The Action Research Process from a High School ELA Teacher's Perspective

Things to Think About

This chapter will provide a vignette of a one teachers use of action research in her (Jobe) classroom. Her vignette will also illustrate important aspects of the action research process and link back to those aspects in the chapters. We hope this will provide some coherence across the preceding chapters!

Many teachers think of research as a cumbersome and meticulous process involving piles of data and hours of analysis. Further, teachers' attitudes toward research can be complicated: while many teachers find value in research-supported systems and strategies, they often view researchers as being too far removed from classroom practice to really understand what teachers need. This is where teacher-driven Action Research comes in—*teachers* who act as *researchers* have the opportunity to be their own guide, potentially influencing teacher praxis in positive and practical ways.

If you find yourself feeling intimidated about conducting your own research, think of the process as very similar to what you already do every day as a teacher. When you consider the steps to Action Research (plan a change, take action, observe, reflect,

repeat), it is easy to see correlations to the teaching cycle. First, teachers must consider their students and develop objectives for the growth they want to see over the course a unit (*plan a change*). Then, teachers must create a series of strategies to help students make progress (*take action*); during the learning process, teachers collect data on their students to understand what is working and what is not (*observe*). Finally, once a unit is over, teachers assess which students made progress and consider how they can help those students who are stuck (*reflect*). This cycle continues from one unit to the next with teachers modifying their actions to reflect their assessment of the students. Action Research follows in much the same way.

How Does Action Research Begin?

My first formal experience with Action Research emerged in the Teachers as Researchers course that I took during my master's program. I used the weekly reflections on the required readings to identify issues to address in my classroom, either through pedagogical changes or adjustments to my curriculum, and I followed the outlined steps to action research to implement a plan, collect data, and develop a report. Yet, what this experience taught me was I was engaging in action research fairly regularly without realizing it. Similar to my experience in graduate school, the action research process in my own classroom often began from reflection–action steps naturally emerged as part of my own teaching cycle, or from yearly evaluations with administration, during which I identified challenges I was experiencing and problem-solved—usually through research—ways to overcome.

In one particular year, after reflecting on my own practice, I realized (rather, admitted) that my junior-level English students did not enjoy our classroom novel studies, resulting in a lack of engagement and poor performance for many of them. The 'start and stop' method—where students read a chapter, then stop to either discuss the chapter or take a quiz—did not replicate how people read books, and it seemed to be destroying my students' desire to engage with the novels they were assigned. This is where action

research emerged, though if you had asked me at the time, I would not have identified this experience that way.

While the research I conducted in my classroom was not part of formalized project and did not emerge in a linear fashion, I will describe it to you using the outlined steps provided in subsequent chapters to make it clear how your own previous questioning and problem-solving experiences might fit into the action research model.

Topic Development

The first important step in any action plan is choosing a topic and understanding what you are hoping to accomplish. If I consider the questions posed in Chapter 2 related to the processes of an action research project, here is what I understood about my chosen topic:

- **Does it address a practical problem?** I wanted to address students' lack of engagement with classroom novels (research topic). This was a practical problem in an ELA classroom because the curriculum is often built around novel studies, and if students were not engaged with these units, they risked poor performance in the class.
- **Does it generate knowledge?** The goal was to research different whole novel study strategies and implement changes in my own classroom to see which strategies improve engagement.
- **Does it enact change in your pedagogy/classroom/school?** Yes. By addressing this problem in my own classroom first, I could test strategies that worked and develop a plan to share those strategies with colleagues in my ELA department.
- **Is it participatory?** Yes. As the classroom teacher implementing the strategies, I would be actively involved in the research process.
- **Could it be a cyclical process?** Yes. The strategies I implemented could work to improve engagement, but they may not improve overall performance, which would raise new questions for me as I refined the process. Each outcome could generate a new and interesting question to address in the

future. Further, the strategies I develop could have a significant impact on one group of students while showing little effect on a different group, which would also prompt further investigation.

This particular research topic fit in the ‘Improving Classroom Practice’ context because my focus was on changing pedagogical strategies to improve student outcomes. From this point, I had to develop a research question to guide my thinking, knowing this question may change as the research process evolved. For this topic, my research question had three parts: *How can I adapt whole novel studies to more closely reflect the natural reading process, take into account each student’s reading level, and improve overall reading performance and engagement?* This question was complex, and multi-faceted, which meant it would likely change as the project developed, but it gave me a good place to start because it focused on the three challenges within my chosen topic.

Understanding the Research

In a formalized project, the literature review would be a compilation of several pieces of research from different sources that help you understand the research that already exists over your chosen topic. In this example, my next step in this process was to find research on whole novel studies in the classroom and use that information as a catalyst for my own research. I read several articles and one full-length book on alternative methods to whole novel studies, but most of what I could find was based on a middle school classroom. This was good news! It meant, on a large scale, my research would have a place in the broad educational context by filling an existing void in the information available to classroom teachers. On a small scale, this meant other teachers in my own department could benefit from what I design since a lack of resources existed in this area.

Researching Action

The action part of the research comes from the literature review and understanding your topic: what are you going to do in your

classroom to address your question? In this example, after reading several examples of alternative methods, I settled on three new strategies I was interested in testing in my classroom:

- **Allow students to read at their own pace**—I held them accountable by asking them to do three things: read 25-30 pages per day, complete 4 sticky note annotations per chapter, and adhere to checkpoints throughout the unit. To support the goal pace, students were given in-class time dedicated to reading, and the only homework assigned during the unit was to read; however, students could read ahead if they wanted, and they were not necessarily punished if they got behind. This addressed part one of my research question: *how can I adapt whole novel studies to more closely reflect the natural reading process?*
- **Sticky Note Annotations with the Three Levels of Thinking** (*literal, inferential, critical*)—Students had to complete four sticky note annotations per chapter with an attempt to demonstrate thinking at all three levels, and I offered extension activities for students who decided to read ahead. This addressed part two of my research question: *how can I adapt whole novel studies to take into account each student's reading level?*
- **Personalized Writing Prompts**— I allowed students to create their own writing prompts at the end of the unit to demonstrate their knowledge of the novel. This addressed the third part of my research question: *how can I adapt whole novel studies to improve overall reading performance and engagement?*

I implemented these strategies in two different courses, one of which was considered an 'advanced' course, with students at all different reading levels. The three strategies allowed for differentiation while also keeping the class on pace to finish the unit at the same time.

Data Collection and Analysis

The data I collected naturally aligned with the three new strategies I adopted for the unit. Since these strategies were all new to the classes, I could isolate my observations on those interventions and compare the outcomes to previous novel studies that did not incorporate these strategies.

Data Collection Methods

I collected data using four different sources throughout the unit: sticky note annotations, reading progress checks, student reflections, and final essays. First, to track progress toward part one of my research question, I monitored student reading engagement by observing their reading in class. Using a scale of 1-4, I recorded student progress toward the daily 30-page reading goal on a spreadsheet. Second, to track students' understanding of the text, I read their sticky notes for each chapter, noting their level of thinking based on their commentary (literal, inferential, or critical). The goal would be to see students move toward more consistent critical thinking as the novel progressed. Finally, to gauge student engagement and performance, I used a formative assessment in the form of their final essays, and I used a reflection to understand their own feelings about the new method and their progress. These four data sources reflect a combination of qualitative and quantitative data.

Data Triangulation & Analysis

To better understand the efficacy of the new strategies I implemented, I looked at all four sources of data and I discovered that the qualitative data supported what I saw in the quantitative data. When I read student reflections, many mentioned feeling a greater sense of enjoyment throughout the novel study—some of these students admitted to getting behind on the reading at a few points, but concluded that having the final deadline as the only looming one eased their anxiety and allowed them to engage more completely with

the novel as they worked to get caught up. Other students mentioned that they usually disliked annotating texts, but the sticky note process was less intrusive, and actually helpful as they went to plan their own essays. Finally, students enjoyed choosing their own writing prompts because it made them feel more ownership of the unit.

When I looked at my spreadsheets tracking student progress, I could see that students improved on the 1-4 scale over the course of the unit—the few students who were sometimes behind on meeting the daily reading goal had gotten back on track by the end of the unit, and the majority of students had stayed on pace the whole time. Annotations on sticky notes showed an increase in students at the critical thinking level, and their essays were largely more comprehensive and thoughtful than essays for previous novel studies.

Still, like with most things in teaching, not every student showed progress because of these strategies. While the vast majority did improve, there were still students in each class who showed no improvement in meeting the goals of the unit, despite the change in strategies. If I was going to continue this research, my next question in the cycle would begin here.

Action Implications

The final step in the process is to consider what the data implies about your research question. What I learned from implementing these new strategies is that adapting the whole novel study process to be more reflective of the natural reading process allowed me the room to take into account students' different reading levels, which kept them on pace and engaged. By giving students more ownership in the unit, they performed better on assigned tasks, like reading on pace, taking notes regularly, and analyzing the novel at the critical level.

The successful first attempt at changing my practice was exciting because it meant I could (and should) continue to adapt these

strategies each year, refining the process until it meets the needs of all students and generates positive outcomes in all classes. When I set out to change these classroom practices, I did so to benefit my own students, without any plans for taking the research and its outcomes beyond my two walls. However, I have always found the most meaningful professional development for me as a teacher is when I get the opportunity to learn from my peers. It was important to share what was happening in my classroom to give my colleagues that same opportunity.

Dissemination

To share my research, I developed a small presentation for my ELA department. I drafted an outline of the strategies, including examples of student work, to provide each teacher, and I spoke at a department meeting about the positive outcomes I had achieved from making these changes. I had several teachers request more information about this process following the presentation.

Dissemination plans do not have to be extensive to be effective. In Chapter 4, we discussed the need to understand your capabilities and realize that change often happens slowly. My research addressed an issue that many teachers in my department were dealing with but it focused just on my classroom, making data collection and analysis manageable. The opportunity for my research to impact more classrooms in my school came from my dissemination plan. I could continue to develop my reach by presenting at a school-wide or district-wide in-service, or I could even plan to present at a local, state, or national conference.

Conclusions

Action research is a powerful professional learning tool because it asks you, the teacher, to take a critical look at your own classroom and theorize about your pedagogy, with the understanding that this process is both reflective and fluid. Because action research is unique to your own educational context, it does not look the same for everyone, and each educator's learning will be distinctive.

Though the example of action research provided here does not reflect a formalized project, it speaks to how teachers naturally engage in the process of questioning and problem-solving to create change for their students. It also demonstrates the value in what teachers discover in their own classrooms. By thinking of the action research process as similar to the teaching cycle, you can more easily step into the role of Teacher Researcher and begin developing a plan to positively impact your classroom.

Recap :

To review, the steps to action research and the corresponding examples presented here are as follows:

1. **Plan a change:** develop the research question and conduct a literature review.
 - *How can I adapt whole novel studies to more closely reflect the natural reading process, take into account each student's reading level, and improve overall reading performance and engagement?*
2. **Take action:** decide what steps you will take to conduct your research.
 - *Implement three new strategies: allow students to read at their own pace, utilize sticky note annotations, incorporate personalized writing prompts.*
3. **Observe:** collect data on the changes you have implemented.
 - *Use spreadsheet data on reading goal and levels of thinking, student essays, and student reflections.*
4. **Reflect:** consider the results of your study and plan for dissemination.
 - *Develop a presentation for a school department*

meeting.

5. **Repeat:** consider how your research could continue.
 - *Revise the strategies to address students who did not show progress in the unit. Ask more questions.*

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