

Professional Development through Early Childhood Teacher Research

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“I love the voice of teacher research. It encompasses the personal and professional points of view that are who we are as teachers.”

—Third Grade Teacher Researcher

Early childhood teacher research is a form of professional development for teachers and teacher educators. It is about systematically studying teaching and learning and applying results to new situations. Such activity leads to a deeper understanding of teaching. When early childhood teachers question their practice and search for answers, they grow in professional knowledge. Others say it is transformative teaching, in that once teachers have studied an issue of personal importance and deepened their understanding, they do not go back to old ways of doing things. For those who want to practice teacher research, it is helpful first to explore current teaching practices. The process of teacher research may help meet professional standards and is similar to the process involved in National Board of Professional Teaching Standards certification.

Teacher research can be done for many purposes, especially professional development, more effective teaching, and professional contributions to the field. For many experienced teachers who incorporate teacher research into their everyday practice, teacher research is just good teaching. It is what good teachers naturally do in order to answer questions they have about teaching and learning (Shagoury & Power 2012). As one teacher said, “I now realize that as a kindergarten teacher, I can be a researcher too.” Teachers who think about their impact on children will question their actions and whether they make a difference. Answer-

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ing these questions through teacher research helps a teacher better understand children's learning and make necessary changes. This spiraling process fosters professional development and understanding. Teachers who don't question their work don't usually grow as professionals.

The professional life of a teacher has a certain developmental progression to it (Steffy et al. 2000). It may even begin in childhood with an interest in imitating a teacher or playing "school." The passion to enter teaching is often driven by a desire to help people, especially to help them learn. Professional education in teaching may include a 2-, 4-, or 5-year program, or a graduate teacher education program at a college or university. It may also include a teacher training program or alternative teacher certification pathway. Various forms of teacher inquiry may be part of teacher education programs at both the undergraduate and graduate levels. For education students focused on early childhood, all pathways eventually involve working with young children. Professionals beginning their teaching careers may have many questions. While answering these questions and gaining valuable teaching experience, a teacher's quest for knowledge may become more systematic, searching for information to document the difference made in children's lives. At this point an early childhood professional may be drawn to teacher research, either as an individual teacher or with a group of trusted colleagues. Teacher research helps teachers better understand how to meet educational goals and to better articulate their work to others, including parents and administrators.

What teachers already do that can become teacher research

The idea of doing teacher research may be intimidating to those who haven't considered it and who view research as a capital R endeavor—something that others removed from the classroom do. In order to get beyond these perceptions, it helps teachers to consider what they currently do that could be data for a systematic study about teaching and possible changes to practice. For example, teachers who currently gather any of the items listed below should consider these things as possible data sources already at hand that could answer questions about teaching, children's learning, and the educational program.

Possible existing data sources

- Children's drawings
- Examples of written work such as journal entries, worksheets, narratives, and assignments
- Photos/videos of children's block constructions, sand play, dramatic play enactments, and performances
- Anecdotal notes on children's activities
- Rubric performance assessments

- Quizzes/tests
- Records of children’s progress
- Children’s portfolio items, such as written stories and illustrations, which demonstrate long-term progress

Taking inventory of existing data sources for teacher research questions is a good step to take before beginning a study. A teacher may find that in order to answer questions she doesn’t need more data, but just needs to systematically study the data she currently has. Teachers who considered their current information explain how getting research started can be quick and easy:

I had photos of my preschoolers’ block constructions that I could use as data to answer my research question about what children learn through block play.

I wanted to find out if reading comprehension, specifically sequencing, was learned better by my third graders in small group or large group work. I found I could use my existing rubric assessments to analyze by small/large groups.

Our program requires that we complete forms making anecdotal notes on our 4-year-old children’s activities during center time. I wanted to study what choices individual children were making and how their choices were reflected in their learning. I used my existing anecdotal records to study that question.



Current teachers may want to inventory the possible existing data sources they already have access to. They should make a list of all the ways children's learning is documented in their programs, and review this list while reflecting on teacher research questions to ask and answer with existing data. This list and set of questions is a source for possible future teacher research projects. If not currently teaching, professionals may want to conduct a brief interview with an early childhood teacher, asking about the existing ways children's learning is documented in his or her program.

Teacher research as evidence-based teaching

Many teacher education programs that meet accreditation standards of the National Council for Accreditation of Teacher Education (NCATE) prepare students for **evidence-based teaching**—teaching focused on documentation of learning with evidence, such as assessments of child performance and achievement. Teacher education students may be asked to prepare lessons with clear performance objectives, implement lessons with children, and then assess the extent to which the objectives were accomplished as evidenced by an analysis of children's performance. Teacher education programs are increasingly required to demonstrate their students' evidence-based teaching (Cochran-Smith 2006).

For example, an undergraduate preservice teacher education program offers a course entitled Literacy in Early Childhood Education. Benjamin, a preservice teacher taking the course, has questions about connections between children's social-emotional learning and their emergent literacy. He really wants to know what children might learn about the meaning of friendship by listening to and discussing a children's book. He thinks it is important for young children to learn how to be a friend through children's literature; class discussions about friendship and what it looks, sounds, and feels like; role play of various friendship scenarios using puppets; and through the teacher's own modeling and pointing out to children instances of what friends do for each other.

Benjamin can integrate his personal teacher research objectives with evidence-based teaching requirements. One requirement of his course is to work in a preschool classroom and teach literacy lessons based on mandated literacy objectives for the preschool level. Students are evaluated not only on the lesson they prepare but also on their assessment and documentation of children's learning. Benjamin prepared a lesson for his practicum setting in a 4-year-old classroom. His literacy objective from the state-mandated list for 4-year-old programs was for children to understand and comprehend literature, such as a children's book. He chose the book *Friends* by Helme Heine to share with his group of children. He then prepared a lesson plan complete with the literacy objective and a description of the planned group time read aloud and discussion of the book.

Benjamin's assessment of the literacy objective was to determine children's understanding of the story by their responses to questions about the story. He

hoped to learn to what extent they understood the friendship behaviors of the book's characters and the extent to which they could retell the story. In his documentation of children's learning, he wrote that all eight children were able to describe the friendship behaviors of the characters, four children could give specific examples of other types of friendship behaviors they had experienced, and three children could retell the story with no errors. In his teacher journal, he reflected on what he thought children had learned about friendship and described several anecdotes he observed of children helping each other and remarking on how their behavior was similar to the characters in the book.

What makes this an example of teacher research and evidence-based teaching? Benjamin extended his thinking about children's learning by asking what they were learning and systematically documenting their learning in his assessments and in the journal he kept. Benjamin's own interest in children's learning about friendship motivated his behavior and resulted in his ability to answer his own research question. This investigation is a good example of how a preservice teacher can learn that the process of teacher research leads to becoming a good teacher.

Inservice teacher research

Inservice teachers who do teacher research may be motivated in similar ways as Benjamin to learn more about children's understanding in order to improve teaching. Inservice teachers practicing teacher research tend to be either more experienced teachers seeking to improve their teaching or teachers exposed to teacher research who are intrigued by the results and wish to be part of the process. Even more than for preservice professionals, it is vital for inservice teachers to use teacher research to demonstrate evidence and documentation of children's learning to others as well as to themselves.

An example of an inservice teacher research study comes from a third grade teacher, Jan, who wanted to document children's mathematics learning to show evidence of their understanding to parents and her administrator. One state-mandated learning objective for third grade math was to develop problem-solving strategies. Jan wanted to find out whether children learned problem solving better from the required math curriculum or from playing math games requiring strategy. She embarked on an eight-week systematic study by dividing her class in half and engaging one half in the mandated curriculum and one half in game-playing. After four weeks she assessed their problem solving. She then switched the groups so that the game group participated in the math curriculum and the mandated curriculum group engaged in game playing. After an additional four weeks she gave a similar problem solving assessment to all children. Children were asked to show as many strategies for solving a problem as they could. Then she compared their performance in terms of the number of strategies each child demonstrated to correctly solve the problem in both the first and second assess-

ments. In comparing performance, Jan found no significant differences in their ability to solve the problem with at least one strategy, but the group that played games first and then participated in the math curriculum demonstrated a greater number of problem-solving strategies than the other group in both assessments. She decided to change her teaching by incorporating game playing first before introducing the mandated curriculum.

What makes this an example of teacher research? Again, this teacher conducted a systematic study. She examined two different ways to teach problem solving, collected and analyzed assessment data, and used results to make changes in her teaching. Conducting the study gave her a more informed understanding of children's problem-solving strategies plus the evidence to apply what she learned to her teaching by making modifications to her program.

Advanced-level teacher research

Teachers at all levels may encounter and begin practicing teacher research. However, many graduate programs now require either a course in teacher research or a unit on teacher research in other courses. Experienced teachers who have been teaching for a few years may first hear about teacher research in a graduate class. They may be asked to plan and conduct a teacher research study in their own classroom. For example, Tamara, a first grade teacher working on a master's degree in early childhood education, was required to take two research courses. She chose a course on teacher research because she thought she could apply it to her teaching. Course requirements included planning and conducting a teacher research study on a question chosen by the student. Tamara had never thought about doing her own research and had difficulty posing a teacher research question.

Engaging in a structured class discussion called a **protocol** (McDonald et al. 2007) used in the teacher research course to refine research questions gave her insight into what she wanted to do in her own project. Tamara worked in a school on the state school improvement list; they had to improve their test score results or face being taken over by the state department of education. There was much pressure on the teachers at Tamara's school to show test score increases. In fact, recess had been eliminated two years earlier in order for teachers to devote maximum time to improving test scores.

Tamara was worried most about her students' math scores, and brainstormed what she could do to improve them. She had heard about a school in which fifth graders were allowed to sit and bounce on large inflated fitness balls while doing their school work. The classroom she read about had no chairs, only fitness balls for children to sit on. The teacher and children seemed to like the situation and reported being more interested in school work as a result of the extra movement.

Tamara decided that her first grade students might benefit from more opportunities for movement, especially since recess had been taken away. Tamara planned a study to see if using fitness balls with her children could increase math test scores and interest in math. She collected children's baseline math test scores and then implemented math time with fitness balls. After a period of four weeks, she collected math test scores and compared them to the baseline data. In addition, she interviewed seven children at random about their interest in math before and after using fitness balls. Not only did math scores improve, but children also enjoyed the opportunities for physical movement they had previously been denied. Based on their interview responses, all seven children indicated more interest in math after using the fitness balls than before the balls were available. Tamara had begun her graduate teacher research class with few ideas, but ended it with a successful project that increased her enthusiasm for doing teacher research and benefited her first grade students.

Conclusion

These are a few ways that early childhood professionals can engage in professional development through teacher research. Teacher research is transformative (Castle 2006; Cochran-Smith & Lytle 2009). As Cochran-Smith and Lytle detail (2009), it is a form of *inquiry as stance* that can transform education. In commenting on what teacher research has meant to him, teacher Jeffrey Wood stated:

I can no longer teach without using teacher research, whether it is a formal study . . . or the daily analysis of my classroom practices. Teacher research gives me the attitude of a learner and helps me see how to shape my classroom practice to better guide my students and support their learning. Through collecting and analyzing daily events I have a heightened sense of what is happening in the classroom, freeing me up to better listen to and respond to the needs of my students, allowing me to learn from them. (2005, 10)

Teachers who do teacher research do not go back to the status quo, but continue to grow professionally.

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