

Teacher Researchers as Teacher Leaders: A Force for Improving Teaching and Learning

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Abstract

This article examines the potential for classroom-based teacher research to support teacher leaders, instructional experts who are committed to examining and improving teaching and learning in schools. The authors share their research examining the intersection of teacher research and teacher leadership. Study participants, practicing teachers in a M.Ed. program, completed electronic open-ended surveys, and participated in group interviews. Findings suggest that conducting teacher research in their classrooms and schools and sharing knowledge of the research process and/or research question or topic beyond the classroom, provided opportunities for teachers to assume both formal and informal leadership positions. Concluding that teacher research can build teacher leader capacity, the authors suggest ways in which schools can support teachers who, by the knowledge, skills, and confidence developed by conducting teacher research, can lead in uncertain times.

Keywords: teacher research, teacher leadership, practitioner inquiry

Introduction

There is an established relationship between teacher research and teacher leadership. Teacher leaders are practitioners who have demonstrated a high level of instructional expertise and are committed to examining and improving teaching and learning in schools. Teacher research provides the tools for teacher leaders to study their classrooms in intentional and deliberate ways (Cochran-Smith & Lytle, 2009; Falk & Blumenreich, 2005). *In Teaching 2030*, Berry (2011) suggests that teachers who are researchers and leaders “have a deep knowledge of how to teach, a clear understanding of what strategies must be in play to make schools highly successful, and the skills and commitment to spread their expertise to others—all the while keeping at least one foot firmly in the classroom” (p. 136). In another example of the intersection of teacher leadership and teacher research, Charlotte Danielson’s (2014) framework for teaching professional responsibilities encourages teachers to take a leadership role in promoting a culture of professional inquiry (p. 97). Additionally, the Interstate Teacher Assessment and Support Consortium (InTASC) Model Core Teaching Standards (2011) include numerous indicators referring to the teacher’s ability to conduct research to contribute to the knowledge base of teaching, as leaders in the profession.

Teacher leaders want to grow professionally while staying in their classrooms and have influence that extends to others within their schools, districts, and beyond. Teacher research provides ways for teachers to demonstrate leadership skills and develop a stronger voice to share what they learn about teaching and learning. By conducting systematic research in their own classrooms, teachers see how their work as classroom researchers can improve school and

classroom environments, increase teacher learning, and provide motivation, perhaps at a time in their careers when they want to take charge of their own professional development.

Teacher researchers identify a research question, design an intervention, collect, and analyze data, and then act to improve practice. Studying their classrooms in systematic ways by using well-established research methodology provides opportunities for teachers to see themselves as teacher leaders (Cochran-Smith & Lytle, 2009; Falk & Blumenreich, 2005; Hendricks, 2017). This intentional and deliberate reflection on practice for the purpose of improving instruction is the reason teacher leaders should be conducting teacher research in their classrooms, schools, and districts. When teachers are active constructors of knowledge and feel ownership of their learning about teaching, they are: (1) empowered, (2) confident to share and possess a voice, and (3) more willing to collaborate with others who share a similar commitment and vision (Ryan et al., 2017, p. 111–112). It is this empowerment, confidence, and willingness to collaborate that moves teachers to assume informal and formal leadership positions in their schools. While there is a wealth of literature on how to conduct teacher research and an increasing amount of literature that describes the roles of teacher leaders, there are limited studies on the intersection of these two important areas.

Our research focuses on the potential of teacher research to move practitioners who see their classrooms as sites for inquiry to become leaders, not only in their classrooms but in their schools, districts, and beyond. We explore how teachers who conduct research in intentional and deliberate ways, such as using well-established research methodology, as well as how they develop skills and knowledge as teacher leaders. In order to better understand how teachers can leverage teacher research to continue their professional careers as teacher leaders, it is essential to examine how teacher research positions push teachers to move toward leadership responsibilities.

Teacher leadership begins in the classroom where teachers can demonstrate leadership skills through effective instruction (Furtado & Anderson, 2012; Hunzinger, 2020). One way to exhibit instructional leadership is through teacher research. Conducting classroom research is meaningful and results of research impact actual teaching practice. Because teachers' inquiry projects typically center on their students' success or their own teaching, teacher research "can apply theory and research to their applied practice; produce information to individual teachers' curriculum and classroom methodologies; utilize valuable data directly from the source; create a platform to disseminate knowledge to teachers locally, regionally, and nationally; and encourage teachers to apply problem solving skills to real classroom situations" (Keating et al., 1998, p. 381).

Katzenmeyer and Moller (2009) agree that action research/teacher research "engages teacher leaders in disciplined inquiry conducted to inform and improve practice by using the results (of their research projects) and other research (review of the literature)" (p. 56). According to Katzenmeyer and Moller, the benefits of teacher research for leaders include reviewing the current research base to add to the professional knowledge of teachers. This interrupts the way many teachers access knowledge about teaching and learning from outside "experts" and reinforces the value of results from authentic classroom inquiry. The cyclical process of teacher research—questioning, planning, reflecting, acting, observing, reflecting, replanning, and often questioning further— "sets teacher research apart from the regular problem solving that teachers do every day" (Levin & Schrum, 2017, p. 83). Teacher research provides immediate data to improve instruction and student learning and "calls upon teacher leaders to use data to make decisions about effectiveness of their practices in the classroom" (p. 83).

Additionally, teacher research provides opportunities to gain professional experience as teacher scholars, mentors to novice researchers, and facilitators of learning communities for practitioner inquiry.

In addition to the immediate benefits for teaching and learning in the classroom, by conducting research in their classrooms, expert teachers exhibit leadership skills that can lead to opportunities in their schools and districts, by “promoting a culture of professional inquiry among their colleagues” (Lee et al., 2014, p. 218). By creating a school culture in which teachers see their classrooms as sites for inquiry, professional learning communities can take shape where teachers can contribute to and learn from the research conducted by their colleagues. In this way, teacher research can become “the stepping-stone for school improvement formulated, led, and disseminated by teachers serving in the role of teacher leaders” (Lee et al., p. 220). Beyond participating in learning communities for teacher research, teacher leaders can contribute to the ongoing development of the profession by sharing their work regionally or nationally through presentations and publications. By looking outside their classrooms to share knowledge about teaching and learning, teacher leaders “can elevate the entire profession by making sure that colleagues, policymakers, and the public know what works best for students” (Berry, 2011, p. 141).

Wolkenhauer et al. (2017) describe this intersection of teacher research and teacher leadership as opportunities for teachers “to lead with literature, to lead from data, to lead through sharing, and to lead by example” (p. 127). The process of conducting teacher research—posing a research question, designing the study, collecting, and analyzing data, arriving at findings conclusions and implications, and sharing findings with others— “requires teachers to intellectually and practically reflect on what we do, why we do it, and how we do it . . . to change and improve our practice” (Lee et al., 2014, p. 222). This professional, intellectual, and practical approach to creating knowledge about teaching and learning in the classroom has the potential to create leaders. Teacher leaders who make classroom inquiry a key part of their work develop skills to use beyond the classroom walls, including involvement in policy and decision making at all levels of education. Given this leadership potential, it is important to consider how the study described here will contribute to our knowledge, practice, and preparation of teacher researchers.

Introducing the teacher research process to teachers who will then integrate it into their practice is challenging. In our course, *Teachers as Classroom Researchers*, we guide teachers as they reflect on their practice to construct a research question, design a plan to collect and analyze data, and arrive at findings, conclusions, and implications for future practice. At each step in the research process, we provide opportunities for students to share their work with classmates and with colleagues in their schools. Beyond that, we encourage them to share their results with educators and others outside their schools by submitting articles for publication and proposals for presentations at conferences. Our ultimate goal is that they will see the potential of classroom research to improve their teaching and to increase their knowledge about what and how to teach. Going further, as teachers who see their classrooms as sites for inquiry, they gain the confidence, skill, and knowledge needed by prospective teacher leaders.

Coupling research and leadership is a powerful tool for making a real difference in schools today. When teachers make decisions about teaching and learning based on authentic data and share the results beyond the classroom as teacher leaders, positive change can happen. Through our work with PreK-12 educators over the past decade, we have witnessed teachers grow and develop into formal and informal leaders as a result of their work as teacher researchers:

Teachers become researchers by doing research . . . They become both learners and teachers, turning private conversations into public forums, studying their own and others' learning process, and creating a network to assure continuance and support for their efforts at changing their practice and their school. (Lieberman, 2004, p. ix)

In teacher preparation and graduate programs where teacher research is introduced, supported, and required for program completion, the potential for teacher researchers to move to informal and formal leadership positions should be emphasized.

Background

As teacher educators in a state university located in the mid-Atlantic region of the US, our primary teaching and research experience since the early 2000s has been with practicing teachers pursuing graduate study. The M.Ed. in Applied Studies in Teaching and Learning program at our university is designed specifically for practicing career-teachers who have a minimum of one year of teaching experience. The teachers who enroll in our M.Ed. program work in public, parochial, and private schools, teaching in pre-kindergarten to 12th grade contexts and include classroom teachers, specialists such as music and art teachers, and counselors. We work with teachers on our university campus, as well as with groups of teachers pursuing the M.Ed. program in off-campus school district-based cohorts. We consider graduate work for teachers an important element of teachers' professional growth when they advance their skills in teaching, reflection, collaboration, and inquiry, which are themes embedded in the coursework for the M.Ed. program.

As professors in the master's program and co-teachers of the final course in the program, *Teachers as Classroom Researchers*, our research over the past two decades has focused on our students' experiences with completing teacher research projects, which is the program's capstone assignment. Across this work, we draw on Cochran-Smith and Lytle (1993) who define teacher research as "systematic and intentional inquiry carried out by teachers as an integral part of the activity of teachers and as a critical basis for decisions on practice" (p. 63). We are deeply committed to teacher research and its potential to shape teachers' practice and enhance students' learning, acknowledging that classroom teachers construct knowledge about teaching and learning in schools in their classrooms and schools daily. Together, we have worked with more than 250 classroom teachers as they identified problems or questions about and examined ways to improve their practice through teacher research. Students in the M.Ed. program completed teacher research projects on topics related to teaching methodology, student learning, school/district curriculums, academic disciplines, technology, classroom environment, assessment, and their roles in the school/community. As teachers complete their projects, we value their points of view as novice researchers and encourage them to express their perceptions of the process and outcomes of teacher research. We continue to incorporate teachers' voices, their individual experiences, and their understanding of teaching and learning in our own research on teachers conducting inquiry in their schools/classrooms.

Most recently, we have investigated the outcomes of teacher research on the practice, professional growth, autonomy, and leadership of the teachers who have completed our M.Ed. program. We extensively and systematically reviewed teachers' work as researchers and conducted a brief preliminary study where teachers offered ideas about the impact of teacher research on their work as teachers and learners. We then refined our questions and pursued a

more intense inquiry into teachers' work as classroom researchers. Here, we discuss one area of this research focused on how, if at all, teacher research supports teachers who aspire to be teacher leaders in their schools.

Methodology

Research Question

The following research question guided our qualitative inquiry: How, if at all, does teacher research support teachers who aspire to be teacher leaders in their schools?

Research Design

In order to understand the impact of teacher research on teachers' leadership experiences and potential, we conducted a qualitative study using data from open-ended surveys, in-depth interviews, and student artifacts as data (Creswell & Creswell, 2018). Following university IRB approval, we invited all teachers who completed our M.Ed. program between 2010 and 2018 to serve as research participants. From a pool of 137 potential participants, 38 completed surveys (27.7 percent response rate). Surveys included open-ended questions about teachers' experiences conducting research and their perceptions of connections between teacher research and teacher leadership.

After survey analysis, four focus group interviews were held over Zoom. Of the initial 38 participants, eighteen completed focus group interviews. Interview groups were comprised of four to six research participants. Focus group participants' teaching experience ranged from two to twenty years. Most had completed 7 to 15 years of teaching experience at the time of the group interviews and were employed in public, private, parochial, and international settings. All eighteen interview participants were full-time teachers at the time of the group interviews. Four of the eighteen participants continued their graduate education at the doctoral level. Interviews were designed to facilitate additional discussion, allowing participants to elaborate and expand on survey responses.

Data Analysis

Initial qualitative data from surveys were independently hand coded to generate and refine emergent themes (Creswell & Creswell, 2018). Survey data were shared with interview group participants to serve as a member check for initial theme identification. Group interview recordings were transcribed and data from interviews were hand coded and analyzed independently. We met regularly during data analysis to cross-check independent coding for efficacy of identified emergent themes (Creswell & Creswell, 2018) to determine consensus and validate themes (Saldaña, 2021).

Limitations

Sample size was a limitation of our research. Of 137 potential participants, 38 responded to initial surveys and eighteen teachers participated in group interviews. Recruitment was impeded by the inability to contact teachers who were no longer teaching in the same schools or the same districts when personal contact information was not publicly available.

Research Findings

Data from surveys, focus group interviews, and student artifacts suggest that the teacher research experience leads to or supports teachers in leadership capacities. For some, systematically and intentionally studying their own classrooms or schools following an established teacher research/practitioner inquiry protocol extended teachers' knowledge about teaching and learning. As part of the teacher research process in our M.Ed. program, teachers reflect on their teaching practice, ask questions about it, design an intervention, collect data, analyze the data, and then act to improve their instruction. For most, this is their first experience conducting research, however, participants found that the process of classroom inquiry and the knowledge gained about themselves and their students gave them confidence to make instructional, curricular, and assessment decisions based on data they collected in their classrooms. For some, the knowledge about teaching and learning gained through the research process encouraged them to look outside the classroom in meaningful ways that had the potential to benefit students. For instance, several participants shared knowledge they acquired from their research experience with colleagues, administrators, parents, and the broader educational community. As we describe here, teachers believed conducting teacher research led to formal or informal leadership positions. In many cases, teachers remarked that their teacher research experience gave them confidence to ask questions, speak out, and find their voices as teacher leaders.

Sharing Teacher Research To Support Teacher Leadership

Teachers are continuously reflecting on their practice, generating knowledge that improves their teaching and enhances student learning. Much of the knowledge teachers create in the classroom, however, is not shared as teachers are often expected to follow the teaching practices and curriculum provided by outside experts or required by their districts. In our work with teachers conducting research, we create opportunities for in-class sharing and discussion as we support the idea that sharing is an integral part of the teacher research process (Hendricks, 2017). We view sharing with colleagues in class who are also conducting research as fundamentally different from teachers sharing with colleagues in their own schools. In fact, our research suggests that teachers often seek opportunities to share their research with colleagues at the grade level, school level, or district level and lead colleagues in discussions of their research data, findings, and classroom implications. Hubbard and Power (2003) suggest that "other teachers need to know what you have learned and how you have gained your wisdom" (2003, p. xvi). Although we often invite teachers to consider ways to disseminate their learning, it is only as a result of our recent research that we see how teachers are actively engaged in sharing their work more broadly. Teachers discussed what they learned about the research questions/topics they were investigating by drawing on the knowledge and experience of colleagues in their schools and districts. Teachers find value in sharing both the process of teacher research and the product (their learning and impact on their classrooms), and we will explore each of these in turn.

Sharing Knowledge About the Research Process

As graduate students in the M.Ed. program, teachers regularly share their research progress in small and large group discussions. This affords teachers a built-in network of colleagues with whom to discuss and review their research. Teachers in our recent study

described various ways they share beyond the university. We know that teachers who complete research projects in our program follow a thorough and thoughtful methodology, giving them experience with collecting and analyzing data from multiple sources. We see that this experience enables teachers to use their research skills in their schools and districts to lead others in similar inquiries, in whole or in part.

A fifth-grade teacher described her experiences introducing the teacher research process to teachers in her building and supporting them as they completed their own classroom research. A third-grade teacher described her most recent work leading a three-hour action research training segment in her district. Her knowledge of the teacher research process and experience as a teacher researcher allowed her to feel confident when preparing teachers to complete action research in their classrooms as part of the district's evaluation process. Both educators, now building administrators, described how they saw mentoring novice teacher researchers as an informal leadership opportunity. Both carried their work as teacher researchers into teacher leadership positions and then continued to support teacher researchers as new administrators. The rigorous and meaningful research experience they had as teachers was fundamental in their work mentoring other teacher researchers.

Having worked with teachers who are conducting teacher research as alternatives to the required clinical observation and evaluation cycle, we know that experiences, support, and mentoring of teachers conducting research varies widely. Some teachers conducting research in their schools may have limited support and utilize an abbreviated teacher research methodology. In the case of the two former teachers discussed above, their initial rigorous experience prepared them to both value and understand the teacher research cycle, resulting in the mentoring of colleagues engaging in classroom inquiry for the first time. Others who remained as classroom teachers also used their teacher research knowledge and experience to mentor colleagues in teacher research. For instance, several teachers who completed projects in the program guided colleagues who were new to teacher research through an action research project following the process they learned in their teacher research course. One of the veteran teachers wrote that "the experience of mentoring a colleague through her own action research is something I will never forget." As teacher educators, we were pleased to see our former students share the concept of classroom inquiry with colleagues at their school, creating a community of learners around teacher research. Kayla, a fifth-grade teacher, provides another example of teacher sharing as a component of teacher leadership. She recounts:

After my action research project, I met with our curriculum supervisor about making this a different path for evaluation. I helped pilot teacher research as a form of evaluation in our school. I completed another action research project and mentored other teachers in doing projects to meet their yearly evaluation requirement. That caused the teachers to talk about action research and share its benefits with other teachers on their teaching teams. Since then, it has spread throughout the school. More teachers are now choosing to do the action research project for their evaluations. This was an amazing snowball effect that happened because of my experience researching and putting my students at the forefront of my classroom, followed by other teachers and administrators seeing the successes academically and in communication and collaboration.

Kayla's example suggests that sharing her teacher research had a ripple effect within her school building. Not every teacher who shares research will have the same opportunities as Kayla to

create a distinct cultural change and establish teacher research as a norm within their schools; however, other teachers have shared that they are viewed by colleagues as teacher leaders based on their work as teacher researchers.

Sharing Knowledge About the Research Question or Topic

The first step in the teacher research process is identifying the research question or topic. We encourage teachers to use this opportunity to explore some immediate question or concern they have about teacher or student learning. As they complete the remaining steps of the research protocol, which includes conducting a review of the literature on the topic, they gain knowledge that they can share with colleagues and administrators. This puts many teachers in a position to become leaders where they can use this knowledge to make changes to benefit students. For example, Emma, a sixth-grade middle school teacher, works in a district that was planning to move the fifth graders to the middle school to reduce overcrowding. She studied the implications for students, teachers, and parents if such a move was approved by the district's school board and presented the conclusions of her research to district administrators. The proposal to begin middle school at fifth grade eventually failed, and while it is unclear how much influence her research had on the outcome, her voice was heard and her research on the topic was respected. As she summarized: "I cannot say for certain if my research made any impact on the decision, but I like to think it did in some small way." Emma felt confident enough to share her knowledge and lead others in a critical discussion about the proposed district-wide change.

In another instance, Charles, a middle school technology teacher, shared knowledge from his project, *Preparing the Middle School Student for Proficiency in High School Technology*, with his colleagues on the district computer curriculum committee. After reviewing the findings from Charles's research, the committee created a more robust curriculum that addressed the technological needs of eighth graders transitioning to high school. When teachers, like Emma and Charles, share their research, they position themselves as leaders who are knowledgeable about the research process and their research topics. Faith, a kindergarten teacher, shared how her research into kindergarten literacy led to leadership and advocacy. She comments:

Teacher leadership leads to confidence in advocating for what you know works for schools, kids, and education. I've spent several years advocating for what I believe is best for children in kindergarten and literacy. It began with my teacher research. That's where teacher research leads to leadership. I want to do it on a bigger scale. I want to see a fundamental change in education.

Like Faith, other teachers referenced the knowledge they gained as teacher researchers and the impact of that knowledge on their professional lives. Bailey describes:

You think of the adage "knowledge is power." With teacher research, you become more knowledgeable, and people want to come ask you questions. They want to come talk to you about that student they are having a difficult time with and see if you've come across anything in your research that may help.

Teachers Use Teacher Research to Look Beyond the Classroom

From our work with teacher researchers and supported by responses from surveys and focus group interviews, the knowledge teachers gained by looking at their classrooms as sites for research gave them confidence to become informal leaders. Many teachers shared how their confidence developed as a result of their research, offering a sense of assurance and legitimacy that moved them toward leadership opportunities. One teacher explained, “As a teacher who has gone through the teacher research process, I feel more confident and independent in making decisions in my classroom, as well as the school community,” allowing her to contribute to decision-making that occurs outside her classroom. Another teacher offered similar insight: “Having tried various techniques in my classroom, gathering the data, seeing the results, and reporting on them has given me increased confidence in my knowledge of how students are learning in the elementary setting.” These feelings of confidence were referenced by many teachers who were inspired to establish their voices in the broader school community as teacher leaders. For instance, Ned, a teacher from Ireland, remarked that teachers often make decisions in their classroom based on research from “external sources and not from teachers. Sometimes teachers’ voices might be ignored. You’re missing out on such a valuable source.” He suggested there should be a line of communication between teacher leaders and administrators about the “authenticity of completing teacher research in your own classroom.” In this example, Ned reminds us all of the importance of teachers’ voices, the role of teachers as leaders in schools, and the importance of teachers generating and sharing knowledge about their practice.

As we examined teachers’ experiences with teacher leadership as a result of their work as teacher researchers, it became apparent to us that there were many examples of teachers using their research to look beyond the classroom. Teacher research projects are generally conducted by teachers in their classrooms with an intention to investigate and improve students’ learning, students’ experiences, or teachers’ practices. This is true for most of the teachers we have worked with over the years who asked research questions directly related to their classrooms. However, some of the teachers chose to research topics focused outside the classroom that could influence the work of their colleagues in their schools. For example, Sarah, a middle school language arts teacher, asked, “How can a coaching program support new teachers through the tenure process?” Other teachers researched school-wide initiatives, such as curriculum changes, or school-wide programs that were being implemented during the time they were completing the teacher research course. For instance, several teachers investigated school-wide behavioral programs. Sharon, an elementary teacher, studied the topic, “A School-Based Mentoring Program and Its Impact on Problematic Behavior,” while Hillary, another elementary teacher, focused on “Using a Building-Wide Plan to Improve Student Behavior.”

Other teachers conducted research on packaged educational programs that had implications for the wider school population. Catherine, a middle school teacher, asked, “Is the AVID (Advancement Via Individual Determination) Program an effective intervention program for improving student success and college readiness for an at-risk student population?” Lynda, a middle school art teacher, wondered, “What are the effects of a new advisory program on student academic achievement and school connectedness?” Because the topic of bullying was being discussed in many of the districts in our area, several teachers chose that topic for their research projects, including Joanne who studied, “Implementing the Olweus Bullying Prevention Program in the lower school of a private academy.” Like Lynda, numerous teachers investigated topics that were relevant not only within the four walls of their classrooms but were also designed with grade-level, team, department, school-wide, or district-wide implications in mind. In reviewing programs that had school-wide implications, teachers looked beyond the classroom and

contributed to discussions about programs and initiatives that affected the whole school or district.

Teacher Research Leads to Informal and Formal Leadership Positions

A formal teacher leadership role is “defined by a job description, sanctioned by district and school site administration, and built into the organizational structure of the school” (Katzenmeyer & Moller, 2009, p. 35). Informal leadership often emerges from a strong school culture that offers teachers a voice and influence in ensuring students’ success. These informal leadership opportunities often build on teachers’ interests and the needs of the school and can include reading and math coaches, peer mentors, grade level/subject area leaders, web page curators, and hosts for novice teachers. Informal teacher leadership positions are typically fluid and evolving to take advantage of teachers’ various leadership skills. Teachers with whom we worked expressed how conducting research in their classrooms and schools provided opportunities for them to assume both formal and informal leadership positions. Many teachers explained that while conducting their research and after they completed their projects, they shared their experience with the research process and what they were learning about their research questions with colleagues. Some recognized this sharing as an example of informal teacher leadership. Angela, a fifth-grade teacher, shared, “If you research something and other teachers want to try it, too . . . you’re informally leading colleagues.” Another teacher researcher shared the following:

Because I did the research, I was able to bring that back to my team and become a leader in redesigning what guided reading looked like in fifth grade. This was my first time feeling like I had any type of leadership role with these five women, and because I was able to share the research I did, I feel like I became the point person when we were designing lessons. It made me feel like a leader.

Many teachers described how they shared progress on their teacher research experience with colleagues throughout the project from identifying a research question to the findings and conclusions. The knowledge they shared about the question they were investigating, and the research model itself, encouraged colleagues to view the researchers as teachers, scholars, and leaders (Ryan et al., 2017). Another teacher wrote that unless she had completed an authentic teacher research project, “I would have never had the opportunity to dive this deep into something on my own, and this has guided me to promote action research with the teachers I work with.”

Several additional examples of how conducting teacher research projects in their classrooms moved teachers into informal leadership positions stand out. For one teacher, sharing her research project on implementing a math workshop model in her elementary school classroom with the district’s math supervisor, led to the implementation of the model across all grades K-5. The literature review, findings, and conclusions from her teacher research project led to an informal leadership position as “math advocate” as she coordinated and facilitated the math workshop model throughout the school. When the district adopted a new math program, she conducted district-wide workshops on how to implement the new math program with a math workshop approach. With several colleagues, she also held several workshops to inform parents on the new math program. Based on her work in her building and across the district, she was

offered a position as the district's math instructional coach, a more formal leadership role. In her words: "My teacher research has had a ripple effect on my entire professional life."

Another example of how teachers recognized how teacher research moved them to leadership positions comes from a teacher who conducted a research project about how to encourage colleagues and students to increase their time in natural environments for pleasure and health benefits. As she conducted her study and shared her research question and data with colleagues, they began to ask more and more questions about how they might include more time in outdoor spaces in their curricula. About this informal leadership position, she concluded, "This is in no small part due to my teacher research." In another instance, a fourth-grade teacher, who had explored the topic of grit and resilience for her research project, was chosen to represent her school on the district's Resilience Committee where they created "a scope and sequence for class lessons, school-wide initiatives, and teacher resiliency training." Teachers recognized that their teacher research work positioned them to be viewed as leaders on topics they investigated, as described in previous examples. We are pleased that colleagues—both classroom teachers and administrators—recognized the knowledge teacher researchers gained from their research and saw their expertise as beneficial to teachers, students, and the school community.

As we explored teacher research questions from the past, it was clear that, for some, teacher research provided opportunities to demonstrate leadership abilities in a variety of ways. As we expressed earlier, an important element of the teacher research process is disseminating the results of their work beyond the school/district. Some of the teachers with whom we have worked have presented their teacher research projects at conferences, facilitated in-service sessions in their schools/districts, and published in educational journals. Other teachers have submitted proposals for grant funding to complete projects that were extensions of their research projects. By disseminating knowledge about the research process and their research questions or topics, teacher researchers demonstrated their abilities as scholars and leaders. Brad, a gifted education teacher, offered that experienced teachers sharing their teacher research can result in a community of learners, building capacity for more veteran, as well as newer teachers, to become leaders:

With teacher research being carried out and shared by more experienced teachers, new teachers are being exposed to teacher research. Newer teachers can be a part of that teacher research. Then, experienced teachers are doing research not only for their own benefit but also to share findings with colleagues. It encourages colleagues to think about not just their research topic but also about their own classrooms. So, I think leadership is a component of sharing our research. I don't think you necessarily need to be a leader to do teacher research, but I certainly think it provides an avenue for teachers to help the next group of teachers to become researchers, as well.

It is clear that Brad and others understand the importance of sharing their teacher research informally and the impact it may have to encourage a habit of inquiry among colleagues.

When teachers engage in intellectually rigorous, relevant research, they generate knowledge about the research process and question and share that knowledge with colleagues. Building on their confidence, knowledge, and skills as scholars and teachers that are transferable to their work as leaders, they look beyond the classroom for opportunities to lead in formal and informal positions. Charles, the middle school technology teacher discussed earlier, offers the following:

I think more opportunities and experiences you have with teacher research can lead to having more opportunities, in general. I was very lucky to participate in different activities because I had a background in research. Those activities allow you to build confidence. You feel more comfortable, and it also makes you feel more valued. People start to recognize that. That can, in turn, build your confidence and help you accept leadership roles.

Thomas, a physical education teacher, shared the following:

Your research allows you to change and grow and become a more distinct leader, and that opens the door for more collaboration with your own colleagues. Because not every class is the same, having the ability to investigate your classroom and make changes within is really powerful. I think there are a lot of benefits of teacher research that allow you to grow and be a more effective leader.

These examples from Charles and Thomas illustrate both the connection between teacher research and teacher leadership and can offer food for thought about how we can intentionally integrate teacher research into the experiences of all teachers in order to create leadership capacity in a larger number of educational professionals.

Discussion

Leveraging Teacher Research for Teacher Leadership

We are inspired by the teachers discussed above who have begun to position themselves as classroom, grade-level, team, discipline, building, and district-wide leaders and hope that the trend in teacher leadership will continue to grow so that teacher leadership becomes an inherent part of school structure and operations. Our recent experience as educators during the pandemic demonstrated that teachers can be resourceful during a crisis by “leading content design, facilitating capacity building as peer leaders, mentoring, and readily adopting and catalyzing change within an organization” (Pandey, 2021, p. 11). As the teaching community went into crisis management mode, the term “teacher leader” was redefined. Teacher leadership can now be “determined by the proactive roles that teachers play, initiatives they undertake, and the support they render to leadership, students, and parents” (Pandey, 2021, p. 11). As we move into a “new normal,” teacher leadership is more important than ever as teachers may need to make unpredicted shifts to online learning and face continuing and complex issues related to health and safety issues for students and their families.

Given the challenges of post-pandemic education, compounded by concerns about teacher retention and teacher shortages in the US, there is an increased need for teachers to serve as leaders in their classrooms, schools, and districts. Administrators should continually assess the needs of their schools to ensure that teacher leaders have the tools they need to lead, serve, and support their colleagues, students, and parents (Bolden, 2020). It is essential that we look for more ways for teachers to feel valued, supported, and recognized as educational professionals who, by the knowledge, skills, and confidence they developed through teacher research, can lead in uncertain times.

Supporting Teacher Researchers in Developing as Teacher Leaders

There are numerous resources that define teacher leadership and teacher research, providing descriptions of the roles of teacher leaders (Bond, 2015; Harrison & Killian, 2007; Mangin & Stoelinga, 2008) and various examples of the teacher research process (Falk & Blumenreich, 2005; Hendicks, 2017; Hubbard & Power, 2003). However, there are “far fewer pieces that address the interaction between these two constructs, and how each can inform the other” (Wolkenhauer et al., p. 133). Our vision is to find ways for teacher research to contribute to the development of teacher leaders who grow both personally and professionally by evaluating and reflecting on teaching in a systematic way, resulting in more effective teaching and increased student learning. For teachers to see the intersection of teacher research and teacher leadership, the following should be considered:

1. Establish learning communities to support teacher research and teacher leadership.

Most school districts offer mentoring programs for new teachers, however there are few programs that support teacher leaders. Emerging teacher leaders would benefit by participating in professional learning committees of fellow teacher researchers that would provide a forum for sharing their research and discussing how their work as researchers and scholars demonstrate their potential for teacher leadership.

2. Enlist support from school/district administrators.

School administrators can support practitioner inquiry by creating a culture where teacher research develops as a norm for improving teaching and learning. Ryan et al. (2017) stated, “Unfortunately, there are no clear pathways that suggest specific organizational changes to help administrators support the development of teacher leadership” (p. 113). Teacher researchers/teacher leaders can work with administrators to create a culture where practitioner inquiry is encouraged, supported, and respected as a way to add valuable, immediate, and authentic information to the knowledge base on teaching and learning. Teacher researchers/teacher leaders could also facilitate the integration of the teacher research process into the professional lives of more teachers who have the potential to become teacher leaders. Administrative support for teacher researchers/teacher leaders is critically important. More work must be done to ensure that teacher directed professional learning activities such as practitioner inquiry are built into the typical “work lives” of all educators to promote meaningful and ongoing research into teaching practices.

3. Encourage teacher researchers to see themselves as scholars who can lead with the literature and lead from the data.

As suggested by Wolkenhauer et al. (2017), teachers can lead with the literature and from the data. Conducting a review of the literature and collecting and analyzing data are integral parts of the teacher research process. Teachers in our program shared that being current in the existing literature on their research topic made them well-informed on that topic in the eyes of both their colleagues and informal leaders who could share their knowledge. These teacher researchers found that the “direction teacher leadership takes is informed by knowledge that has been generated previously through educational research and practice” (Wolkenhauer et al., 2017, p. 128).

Teacher researchers can also lead from the systematic collection and analysis of multiple forms of data. Teachers with whom we have worked found that in sharing their data with

colleagues for feedback and discussion, they were modeling the benefits of deliberate, intentional classroom research. From observing the work of teacher researchers, others can become inspired to include classroom inquiry in their own practice. We would encourage teacher researchers to see themselves as leaders through their engagement with the literature and data analysis. They would also be modeling scholarship for fellow teachers.

4. Share knowledge about the research process and research question as teacher leaders.

Sharing research-in-progress or completed projects with colleagues, administrators, parents, or students provides informal leadership opportunities for teachers. As we worked with teacher researchers over the years, we have observed that teachers gain confidence in their ability to conduct research in their classrooms that results in knowledge about teaching and learning by sharing their work with others. This confidence and competence in using teacher-generated knowledge to inform and improve practice is reflected in their desire to assume both formal and informal leadership positions in their schools/districts. These positions could include opportunities to facilitate teacher research learning communities discussed above, chairing curriculum committees, and designing staff development and in-service programs focused on teacher research. Participation in the inquiry process prepares teacher researchers to share their learning publicly, “including the changes that they have made to their practice and how such changes have benefited students, effectively positioning them as teacher leaders among their peers” (MacDonald & Weller, 2016, p. 140). Teacher researchers are encouraged to seek out opportunities to share their work beyond the classroom, expanding their roles as teachers, learners, and leaders.

Conclusion

Put simply, we believe that teacher research has the potential to contribute to the development of teacher leaders who grow both personally and professionally by evaluating and reflecting on teaching in a systematic way, resulting in more effective teaching and increased student learning. The teacher researcher as teacher leader is a powerful combination. With support from administrators and colleagues, teachers can conduct authentic research in their classrooms and schools and share the results within and beyond the classroom, establishing themselves as teacher leaders. As Lieberman (2004) stated, “From the start, teachers become researchers by doing research; they become colleagues by shaping a new role for themselves and their principals. They become both learners and teachers, turning private conversations into public forums; studying their own and others’ learning processes; and creating a network to assure continuance and support for their efforts at changing their practice and their schools” (p. ix). The roles of teacher researcher and teacher leader share the same goals—improving instruction for students, developing richer understandings of teacher and learning, and allowing for school reform that includes teachers’ voices.

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