



# Building Teacher Leadership Capacity in Maine

## Introduction

Policy makers, educational researchers, and practitioners have long championed investing in strategies to promote teacher leadership as a means to improve teachers' instructional practices and contribute to sustainable systemic change in educational reform. For three decades, Inverness Research has studied many projects focused on teacher leadership, and we have come to understand that a “teacher leader” is not simply a teacher who has been designated as a “leader.” Rather a teacher leader is a *leading teacher*— someone who, similar to a leading surgeon, is always learning, always striving to improve their practice, and as such, works with their colleagues continuously to unravel the mystery of “effective” practice and to share their learning and expertise with others. Leading teachers are exemplars of thoughtful and reflective classroom instruction who, by example and in many other ways, lead the way for their fellow teachers to actively advance their own teaching.

In the state of Maine, over a six-year period, the Maine Physical Sciences Project (PSP) has created significant human, social, and knowledge capital in the form of leading teachers—whose collective and individual capacities are now important assets that can carry forward the work of improving science education in Maine. Already the development of teacher leadership initiated by the PSP has been expanded through the Maine Elementary Science Project (ESP), and teacher leadership is a critical component of a new effort to improve the teacher pre-service program at the University of Maine.

A core group of individual teachers in Maine who are powerful, motivated, and connected serve as a resource that has already begun to expand their work beyond the life of the PSP project; indeed, they will continue to build upon the PSP's work in much the same way that the National Writing Project and the Knowles Science Teaching Fellowship have created a national teacher leader infrastructure, by leveraging the strength of their leading teachers. Our interviews with these teachers confirm their strong interest in and support for the idea of an ongoing group of teacher “consultants.” They see it as a realistic, feasible approach to carry forward the work that originated with the PSP. The first steps to realize this vision are already being taken.

## Background and Context

To set the stage for a discussion of the effectiveness of and the opportunities created through the teacher leadership work in Maine, we offer some background facts that provide a view into the current teaching landscape in the United States.<sup>1</sup>

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<sup>1</sup> These facts are excerpted from a range of sources including: Berry (2014), Talbert (2010), Jackson & Bruegmann (2009), and Maine PSP background documents.

## Isolation and lack of community and autonomy

- Teachers are relatively isolated as professionals and particularly in rural areas where there might be only one or two science teachers in the school or district.
- Teachers, particularly in rural areas, have fewer opportunities to engage in professional development, especially for science.
- Most traditional professional learning communities (PLCs) in U.S. schools focus on students' test scores rather than "the social nature of learning" among teachers.
- Fewer than one in three teachers in the U.S. have any choice or autonomy about the professional learning opportunities they engage in.

## Dissatisfaction with science education, and how to improve it

- According to our interviews with Maine district superintendents and principals, there is general dissatisfaction with science education at the elementary, middle, and high school levels.
- Research has shown that students score higher on achievement tests when their teachers have opportunities to work with colleagues over a longer period of time and share their expertise with one another.

Prior to the PSP, science teachers in Maine did not have opportunities to work together, nor did they use a common or coherent curriculum; therefore, they were far less able to share materials and practices with each other.

### The PSP has built a strong fabric of teacher leadership

By providing a Leadership Academy that meets several times per year, and many opportunities to lead, all of which are based on the most effective practices in professional development<sup>2</sup>, the PSP has provided opportunities for leading teachers to develop their own practice and to contribute to others. Below are the numbers of Maine PSP Teacher Leaders who participated in three different teacher leadership efforts:

- Cohort 1 (2013-2014) of the Leadership Academy: 11 (3 are no longer in the classroom)
- Cohort 2 (2014-2015) of the Leadership Academy: 11 (1 has since retired)
- Leadership Task Force (2015-2016): 11 PSP + 17 ESP

*This profession is ripe for continuous improvement led by its own practitioners. It is time to encourage and systematize the spread of teacher expertise in high-quality feedback systems.*

*- Barnett Berry*

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<sup>2</sup> Borko (2004); Desimone (2009); Penuel, Fishman, Yamaguchi, & Gallagher (2007).

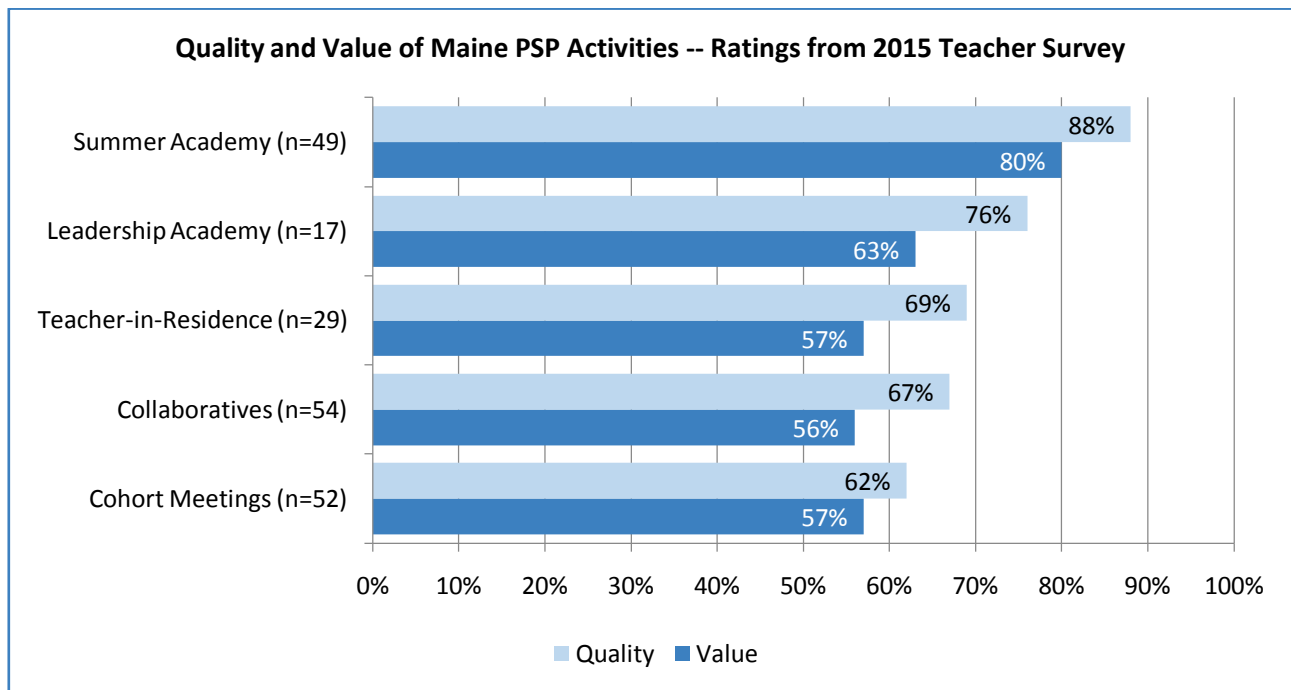
### ***Design Features of the Maine PSP Teacher Leadership Strand***

The Maine PSP teacher leadership strand was designed to align with research on most effective practices in teacher professional development and consists of:

- A focus on content (e.g. science)
- Active learning
- Coherence (across the work, across curriculum, across grade levels)
- Sufficient duration
- Collective participation (community participation)

### **Contributions of the PSP to the Development and Work of Leading Teachers<sup>3</sup>**

The Leadership Academy is one of several Maine PSP activities that teacher leaders participate in. Other activities that contribute to the benefits most often mentioned by teacher leaders include the Summer Academy, the Teacher-in-Residence program, the Collaborative meetings, and Cohort meetings. All of these activities involve the development and nurturing of community among the teachers, and teachers looking carefully at their individual and collective work. They are highly rated by participating teachers in terms of quality and value.



NOTE: Percentages represent ratings of 4 or 5 on a scale of 1 to 5, where 1 = very low, 2 = low, 3 = mixed, 4 = high, and 5 = very high.

<sup>3</sup> These findings draw on the following data sources: classroom observations, numerous interviews with teachers, observations of Leadership Academy meetings, review of Leading Teachers' responses to the PSP's request for proposals, annual teacher surveys, observations of annual summit activities, regular meetings with the Leading Teacher group, interviews and meetings with project leaders.

Through our frequent conversations and interviews with leading teachers and administrators, university faculty, and project leaders, along with our observations of the program, we posit the following for these emerging teacher leaders in Maine:

- ❖ **The PSP has developed a professional community among strong and motivating teachers. The PSP has created a supportive context for the learning, sharing, and focused work of leading teachers.**

*The most important part of the PSP is having the connection to other people and being able to talk about science and teaching science in a way that students are going to enjoy it. Being the only science teacher in the middle school is very isolating.*

Teacher leader

*I really felt like when I had questions or needs that my fall-back was always to go to my fellow PSP teachers because I feel like they are every bit as good and intelligent and qualified as all of those nationally certified people and we have the relationships together and there is no miscommunication.*

Teacher leader

- ❖ **The teacher leadership work has provided opportunities, encouragement, and support for teachers to continue to work on improving their instruction —to get better at getting better.**

*There's so much reflection through the leadership process... the leadership academy and the different projects... it helps me personally to know that I am making progress and I am moving forward. I don't think I think of myself as any different in the community... I just know more people now and have stronger connections, and I feel like there are people who are interested in the same kinds of questions that I am... who are not just trying to be good enough but really want to do the best that they can and can look forward.*

Teacher leader

- ❖ **Working with like-minded colleagues, teacher leaders have opportunities to improve their own and others' science content knowledge.**

*PSP provides me with a community of science teachers to talk with, learn from, and develop my knowledge of science.*

Teacher leader

- ❖ **As teacher leaders teach and learn in their own classrooms, they discover opportunities to lead in their own schools and districts.**

*I didn't see myself as a leader going in and they helped me see the skills I have to be a leader and how I can put those skills to use. It's given me the confidence to say the things I might not have said before and to meet with people and have important conversations in a productive way.*

Teacher leader

❖ **Strong teacher leaders engage and support their colleagues through their interest in wanting to address common issues, regardless of how long they have been teaching.**

*I think it has helped me with the idea that teacher leadership can be about helping others improve practice, but it can also be about the conversations in the hallway that say 'have you tried this, have you done this?' And sometimes, it is presenting at a conference or presenting a workshop and that is okay too—it is not a negative thing to do those things, and you are not trying to say that you are better you know, it is you sharing what you have learned.*

Teacher leader

*What struck me the most is how diverse these teacher leaders are and I think that is such a good picture of what the physical sciences partnership has done: it has given the opportunity for people to be leaders at such different stages of their careers. There are people that are in their first ten years as educators and saying, 'wow, now I am doing this and I am a leader.' There are people saying, 'I had never thought of myself as a leader but now I have these skills,' and then there are others saying, 'I have been teaching for a really long time but/and I am really liking this different approach and I am feeling energized by this kind of information and this way of teaching.'*

Teacher leader

❖ **The Maine teacher leadership community has provided opportunities for teachers to take on new roles and share their expertise with new communities**

Through the PSP, this cadre of leading teachers has already developed the necessary skills to further the improvement work of the PSP and they have already taken on roles, including but not limited to:

- Presenting to their school boards
- Conducting professional learning communities at their schools
- Receiving preparation in *Crucial Conversations* and *Talk Science* strategies so they may provide workshops to other teachers
- Serving in leadership roles for the National Science Teachers' Association
- Implementing professional development for teachers who are new to the Maine PSP
- Working with a Task Force of high school teachers around the NGSS practices of argumentation and modeling as proficiencies to measure for high school diplomas

- Presenting at national conferences for science teachers, such as the NSTA
- Helping to plan and implement the Maine PSP’s student summit
- Sharing the PSP curricula and strategies with teachers and administrators in their schools
- Developing grading rubrics for the science department at their schools
- Developing Project-Based Learning classes
- Leading discussions and work on standards-based and proficiency-based report cards and diplomas
- Collaborating with a university professor and co-teaching a pre-service MST program in Earth Sciences
- Contributing to the thinking about and planning for the future work of the PSP—and the infrastructure required to support ongoing work

Individually, and as a collective, the Maine teacher leaders are poised to work with new and different teachers, schools, and districts, and to contribute to the sustainability of the body of work that has already provided a substantial return on NSF’s investment. In order to do this, they will need to have a continuing supportive organizational structure – a platform that allows them to do work with others, continue their own learning, and further strengthen their own community.

## Summary

The Maine PSP has identified, attracted, and retained a group of highly qualified, talented teachers who can help redesign and lead instruction.<sup>4</sup>

*The PSP on the whole has done a really good job with establishing a network of people who are very willing to work with each other. I think being able to use that network has been extremely valuable, whether it is just a quick piece of advice about an activity or lesson or something about student learning. That part has been incredible.*

Teacher leader

The PSP project currently has additional funding to involve their teacher leaders in pre-service teacher education at the University of Maine, and they have a plan in place for their teacher leaders to provide professional development (and mentoring or coaching) to districts in the region.

*We need to come together to make the magic continue to happen. We need to connect with one another and we need to support one another, and if we don’t then we are not going to be as strong as we are now and that will be a big loss for all of us.*

Teacher leader

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<sup>4</sup> To see a video of leading teachers reflecting on their experience, go to:  
[https://www.youtube.com/watch?v=JfqaDbdf534&feature=em-share\\_video\\_user](https://www.youtube.com/watch?v=JfqaDbdf534&feature=em-share_video_user)

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Inverness Research, a national education evaluation and consulting group headquartered in Northern California, has over 25 years of experience studying local, state, and national investments in the improvement of education.

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