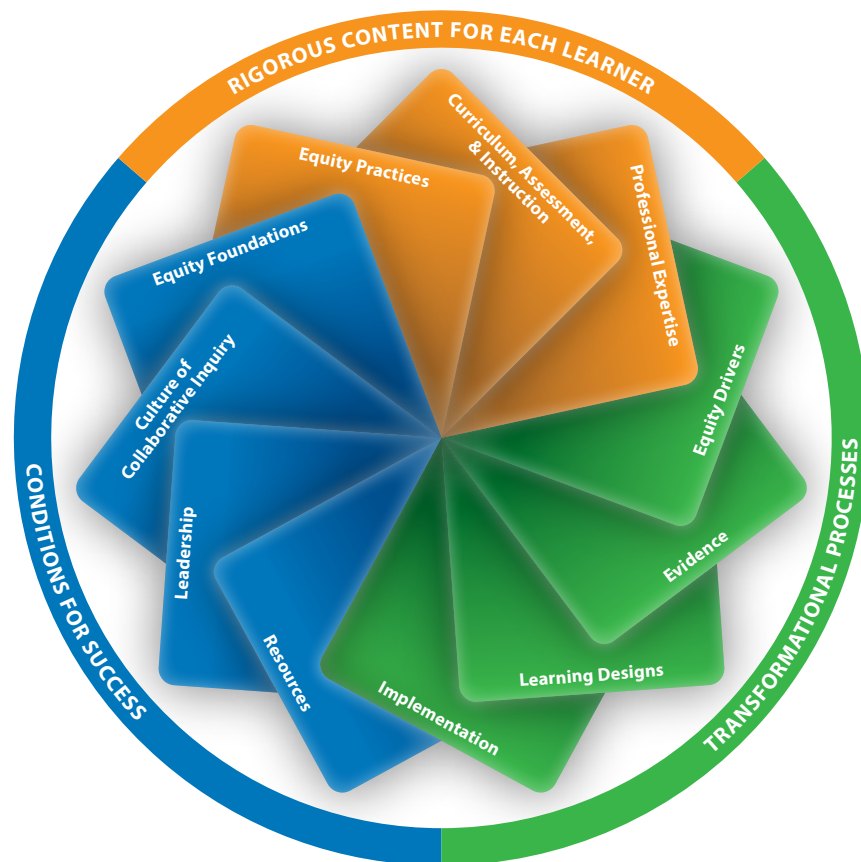


# Standards for Professional Learning

## THE RESEARCH



Author: Elizabeth Foster  
Editors: Suzanne Bouffard, Tracy Crow  
Copy editor: Sue Chevalier  
Designer: Kitty Black

STANDARDS TEAM:  
Tracy Crow (team leader)  
Denise Glyn Borders  
Paul Fleming  
Elizabeth Foster  
Machel Mills-Miles

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Learning Forward  
504 S. Locust St.  
Oxford, OH 45056  
513-523-6029  
800-727-7288  
Fax: 513-523-0638  
Email: [office@learningforward.org](mailto:office@learningforward.org)  
[standards.learningforward.org](https://standards.learningforward.org)

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# Standards for Professional Learning

## THE RESEARCH

**S**tandards for Professional Learning exemplify how research and professional expertise contribute to policy and practices related to planning, designing, and implementing effective professional learning. The 2022 revision of the standards was informed by a range of research and input from educators, with a focus on what we have learned as a field since the last release of standards in 2011.

Learning Forward undertakes periodic updates to standards because educator needs, expertise in the field, and research related to professional learning are continually evolving. In addition, evidence and data are critical to implementing and documenting the results-based professional learning that policy and accountability systems increasingly demand. Most importantly, investments of time and resources must be guided by evidence of what works for educators and students.

Standards for Professional Learning are grounded in research showing that teacher practice can change as a result of professional learning that addresses knowledge, beliefs, and instructional strategies. This change in teacher practice can, in turn, affect student outcomes (Garrett et al., 2019).

Standards build on concepts grounded in evidence and expertise from the field. Educators are eager to engage in professional learning that builds their knowledge and capacity to serve students with a range of diverse needs. Standards support the creation of a professional learning system that

responds to that need.

Standards set realistic expectations but are also aspirational and therefore include concepts that are still emerging in the research. The lag of research behind practice, as well as the fact that there are critical issues underattended to in research studies, has informed the research agenda for Learning Forward.

This paper is a summary of the research base for Standards for Professional Learning, with a discussion of methods, strengths, and weaknesses. It also outlines a future research agenda focused on more clearly delineating how standards-based professional learning leads to positive changes in teaching and learning and on closing cultural and institutional gaps in the research.

### **A SOLID RESEARCH FOUNDATION**

The foundation for standards is decades of research studies that describe the ways in which professional learning can improve educator knowledge, skills, and mindsets and, in turn, improve educator practice and student learning. Standards have consistently affirmed the need to support educators through change processes (Hall & Hord, 2001).

There is a large body of research about the common features and components of professional learning that leads to improvements for teachers and students (e.g. Desimone, 2009), the ways in which professional learning can be a driver for school improvement (e.g. Senge, 1990), and how

professional learning can improve student outcomes (e.g. Yoon et al., 2007).

Many Learning Forward publications contain reviews of the research that has guided earlier versions of the standards. For instance, important findings related to the importance of collaboration in professional learning are summarized in the book *Becoming a Learning Team*, which highlights selected studies and provides steps for educators to act on that new knowledge (Hirsh & Crow, 2017).

Similar resources summarize the research on systems improvement and leadership. A historical look at research related to professional learning is available at the Learning Forward-authored Oxford Bibliography ([learningforward.org/oxford-bibliographies/](https://learningforward.org/oxford-bibliographies/)).

In addition, Learning Forward builds on an enduring body of work by authors and researchers singularly focused on professional learning to understand how concepts related to professional learning evolve and improve — for example, what elements of professional learning are best implemented in teams and systems (e.g. Stephanie Hirsh’s work), how adults approach and are best guided through change (e.g. Shirley Hord’s work), how coaching and feedback have become more sharply defined (e.g. Joellen Killion’s work), and what designs for studying the impact of professional learning on both teachers and students have developed (e.g. Joellen Killion’s and Thomas Guskey’s work).

## UPDATED RESEARCH ON PROFESSIONAL LEARNING

The 2022 standards revision process incorporated the decades-long foundation of research literature, lessons learned from the use and implementation of standards since they were first developed in the 1990s, review and feedback about the content, structure, and language of previous versions of standards, and an examination of new research and evidence related to professional learning since the release of the previous standards in 2011. Evidence from recent and emerging research helped to shape the emphasis on new themes in Standards for Professional Learning.

The standards revision draws on new evidence that supports the longstanding idea that there are multiple, interconnected aspects of professional learning that together positively impact teacher and student outcomes. For instance, a recent study by the Learning Policy Institute found a positive link among professional learning, teaching practices, and student outcomes (Darling-Hammond et al., 2017).

The Learning Policy Institute reviewed 35 methodologically rigorous studies and found that effective professional learning is content-focused, incorporates active learning and adult learning theory, is collaborative and job-embedded, models effective practice, includes coaching and expert support, includes feedback and reflection, and is of sustained duration — all elements reflected in Standards for Professional Learning.

Based on its research, the Learning Policy Institute

recommends that policymakers “adopt standards for professional development to guide the design, evaluation, and funding of professional learning provided to educators. These standards might reflect the features of effective professional learning outlined in this report as well as standards for implementation” (Darling-Hammond et al., 2017, p. vi).

Standards also draw on foundational research about how people learn (Hall & Hord, 2001), as well as new research related to the science of learning that explores how individuals access and process new learning, come to understand new content, and learn through application and inquiry (Deans for Impact, 2016; Darling-Hammond et al., 2020).

## CRITICAL TOPIC AREAS FOR RESEARCH

### High-quality curriculum and instructional materials.

Research about high-quality curriculum and instructional materials as a way to close achievement and opportunity gaps has increased in the past decade, with recent research highlighting the positive impact on educator and student outcomes when educators have access to high-quality curriculum and instructional materials (Boser et al., 2015).

High-quality, evidence-based curriculum that includes educative supports and resources for teachers and is combined with high-quality professional learning improves teacher practice and has a positive impact on student achievement (Taylor et al., 2015). And while some argue that professional learning has a greater impact than curriculum and vice versa, it is the combination of the two that ultimately holds the most promise (Learning Forward, 2018).

Research has found that students in low-income schools are likely to have limited access to high-quality academic content, and teachers spend too much of their time searching for materials that meet their students’ needs, making the adoption and implementation of high-quality curriculum and instructional materials an important equity issue.

This then makes professional learning focused on instruction related to implementing high-quality curriculum and instructional materials an equity issue as well (Learning Forward, 2018). The tight focus on curriculum and instructional materials often acts as a catalyst for systems to better understand how to improve professional learning in general.

**Collaboration and alignment across roles.** Standards for Professional Learning have always affirmed the importance of educator collaboration and alignment across roles in improving individual and collective educator practice as well as the overall culture of the learning environment.

While there has long been evidence that collaboration among educators leads to improved outcomes for teachers and students (e.g. Goddard et al., 2007), more recent research provides critical descriptive detail on quality collaboration focused on instruction (e.g. Ronfeldt et al., 2015), and what educator collaboration looks like in day-to-day practice (e.g. Wilson et al., 2017).

Research demonstrates how traditional collaborative structures become even more effective and powerful when infused with an inquiry approach, deliberately combine individual and collective learning, and build capacity for teacher voice and agency (e.g. Timperly et al., 2014; Hargreaves & Fullan, 2012).

Learning Forward systematically incorporated evidence from the field as well, drawing from data and information from independent evaluations of our own networks such as the What Matters Now Network, which found that structured collaboration led to improved teacher knowledge and implementation of curricula. Papers that synthesize research findings to argue for support of high-quality professional learning policies and practices also informed the standards because they offer a perspective on salient implications for leaders and decision-makers (see, for instance, Hattie et al., 2020).

**The importance of leadership.** Standards for Professional Learning have benefited from new research about the importance of leadership in implementing professional learning. Research has long affirmed the role of the school principal in successful implementation (Desimone et al., 2002) and significant research in the past 15 years has confirmed that effective school leadership is associated with better outcomes for teachers and students (Leithwood et al., 2004).

The school principal has long been recognized as a critical driver for school improvement and student success. Research supported by The Wallace Foundation has found that principals have an even greater impact than previously stated. A synthesis of two decades of studies builds on previous research about how principals impact student outcomes and what characteristics and conditions lead to the greatest impact (Grissom et al., 2021).

The study updates the evidence base about school leadership, responds to changing policy contexts, and leverages recent improvements in research methodology. This report is a major contribution to the field as well as a critical resource for the revision of Standards for Professional Learning.

**Equity in professional learning.** Standards for Professional Learning are more explicit than past versions about the importance of considering equity in professional learning content, processes, and conditions for success. Although equity has always been embedded in Standards for Professional Learning, emerging research in the past decade compelled the creation of three standards to convey how considering equity can affect professional learning, teaching and learning, and student outcomes.

Recent empirical research highlights not only the positive effect of content related to understanding educators' own beliefs and mindsets but also strategies for addressing equity. This field is emerging, but specific studies offer important insights, especially when combined with learning from practitioners.

For instance, one study shed light on how educators could collaboratively learn about and use culturally responsive pedagogy in science to learn more about their students and improve collaboration (Johnson & Fargo, 2009). Several syntheses of quasi-experimental studies on professional learning and culturally responsive teaching reveal that bridging cultures in schools is increasingly becoming a strategy for improving teaching and learning, although the causal evidence related to outcomes for educators and students is still developing.

This research describes the features of equity-focused professional learning and offers some understanding of how to assess and design for quality (e.g. Bottiani et al., 2017; see also reviews by Aronson & Laughter, 2016, and Parkhouse et al., 2019).

**Social and emotional learning.** Emerging research also points to the importance of understanding and attending to social and emotional learning (SEL) in professional learning. Several large meta-analyses found that participation in SEL programs improved students' academic performance, their social and emotional competencies, and their well-being and social behavior (Durlak et al., 2011; Taylor et al., 2017). Research shows that the best SEL approaches focus on concrete, specific, observable, and teachable skills and competencies (Jones & Kahn, 2017; Mahoney, 2018) — outcomes that well-designed professional learning can achieve.

### RESEARCH ABOUT STANDARDS FOR PROFESSIONAL LEARNING

While the standards represent the best available research as well as evidence from field-based learning, the standards themselves have also been studied. American Institutes for Research (AIR) was an important partner throughout the revision of the standards, leading a literature review of studies using the 2011 standards as a framework, then conducting a meta-analysis of randomized control trial studies that looked at the impact of professional learning aligned to standards on educator and student outcomes.

AIR conducted a meta-analysis that found that professional learning aligned to Standards for Professional Learning leads to improved teacher and student outcomes (Garrett et al., 2021). The meta-analysis included 48 studies that examined the impacts of 52 teacher professional learning programs.

All studies considered program impacts on observational measures of instruction, and 34 of the studies also explored impacts on student achievement. The goal of the meta-analysis was to determine, through an unbiased empirical study of evidence of alignment with standards, any association between standards alignment and outcomes for teachers and students.

A meta-analysis is not a causal analysis — the AIR study did not attempt to provide evidence that a program needed

to meet all standards to have impact, nor did it look for a program or programs that met all standards to determine its level of impact or try to find programs that met all standards.

Rather, the meta-analysis analyzed rigorous causal studies that measured impact on teacher and student outcomes to better understand relationships and associations that are found among professional learning, changes in teacher practice, and student outcomes.

Because Standards for Professional Learning are a comprehensive set of statements, the research team used a multivariate design rather than a univariate design because standards often share critical themes (such as collaboration or equity) and must work in concert.

Meta-analyses have limitations. The sample sizes can

be small, and coding can be challenging when there are contributing factors that the research does not articulate — for instance, many studies about professional learning don't explicitly describe factors such as leadership decisions, resource allocation, or process measures.

That said, the AIR findings suggest that the implementation of Standards for Professional Learning is a means to achieve better teacher and student outcomes. The meta-analysis found “consistent evidence that program alignment with the Learning Forward Standards for Professional Learning is associated with improved teacher instruction and student achievement outcomes” (Garrett et al., 2021).

First, the AIR research team studied the 2011 standards, an important foundation for the revised 2022 standards. Each

## TYPES OF RESEARCH THAT INFORM STANDARDS FOR PROFESSIONAL LEARNING

Standards for Professional Learning are informed by many types of research studies, ranging from large-scale randomized controlled trial studies to mixed-method studies, to dissertations focused on close study of a particular professional learning approach.

Learning Forward considered many sources in building the research foundation for the standards revision, including our own research, other standards, theoretical frameworks, case studies, qualitative research, and large-scale data studies. In addition, essays and commentaries about research approaches, methodologies, innovations, relevance to practice, and inequities helped provide valuable insights to the revision of standards and planning for future research partnerships and projects.

Evidence from rigorous studies about particular models have also informed standards. For instance, there is a strong research base for a coaching model using a formal structure and video-based discussions that builds on teachers' strengths to improve relationships with students and, in turn, their academic performance (Allen et al., 2011). This type of study keeps the standards grounded in specific successful models, even as some concepts are generalized.

The 2022 standards revision benefited from research looking at standards implementation in various contexts. Notably, in 2016, a research team led by Carol Campbell did an extensive review of research literature and survey data from across Canada, resulting in the identification of three key components and 10 features of effective professional learning in the Canadian context, which were consistent with features of effective professional learning in Standards for Professional Learning

(Campbell et al., 2016).

The study provided a clear view of similarities and differences in approaches and strategies, including a focus on inquiry, teacher agency, and use of evidence. This study's findings about the importance of educators being able to respond to and support diverse learners informed the revision of the standards in terms of concepts and responsibilities.

In addition to randomized studies and meta-analyses, qualitative studies of long-term professional learning efforts offer rich information about how a comprehensive approach builds the capacity of leaders and practitioners to continuously improve their practice to influence student learning.

For example, a qualitative study by Pak, Desimone, and Parsons (2020) analyzes case studies of professional learning systems in five states to draw out the features of contexts that support effective professional learning, including collective participation and what they call “sustained coherence.”

In addition, Learning Forward's own partnerships and collaborations provide valuable information, such as in the case of Fort Wayne (Indiana), a district that has leveraged the standards in various ways for almost a decade, improving their overall culture and particular leadership practices, and garnering important input about the professional learning needs of teachers and coaches (Psencik et al., 2019).

This is an area rich for study, but it takes a long-term investment of time and resources to get to the links between standards-based professional learning and positive outcomes for educators and students.

of the 2011 standards was positively associated with teacher instruction. All estimates were significantly different from zero, and the average effects ranged in size from 0.48 SD (Learning Communities) to 1.14 SD (Resources).

Similarly, all 2011 standards (when evident in the studies) were positively and significantly associated with student achievement, with average effects ranging from 0.03 SD (Learning Communities) to 0.10 SD (Outcomes).

The AIR research team then studied the 2022 standards and found large, positive average effects on instruction for almost all of them. All of the findings indicated positive, statistically significant average effects, with the exception of a positive but nonsignificant effect for the revised Leadership standard. The researchers posit that this is because leadership actions often are not made explicit in the description of a professional learning intervention. Fortunately, there is a large body of other research supporting the Leadership standard, in large part due to The Wallace Foundation-supported studies over the last decade.

Among the statistically significant effects, the average effects on instruction ranged from 0.42 standard deviations (Equity Foundations) to 0.98 standard deviations (Curriculum, Assessment, and Instruction). The findings were similar when considering student achievement. While the average effect size on student achievement is modest at 0.09 SD, Kraft (2020) has argued that even 0.05 SD on standardized student outcome measures can be viewed as meaningful.

**The AIR researchers concluded, “Investments in professional learning can yield meaningful improvements in student achievement, and the benefits for students come through improvements in instruction” (Garrett et al., 2021).**

Learning Forward is committed to innovative ways to study and document the impact of professional learning. Therefore, the AIR research included a mediation analysis to rigorously study the theory of action about professional learning and the degree to which changes in teacher practice

are factors in improving student outcomes. While research supports the impact teachers have on student outcomes, there is still much about precisely how that happens that is as yet unmeasured (Oppen, 2019).

The AIR mediation analysis is an innovative way to quantify untested theorized relationships — in this case, how much teacher practice impacted instruction and student outcomes. The study found that both instruction and student achievement are responsive to teacher professional learning across a range of content areas.

Learning Forward is pleased that the AIR standards

## TO ACCESS THE META-ANALYSIS

You can download the AIR report, *How Learning Forward's Standards for Professional Learning are associated with teacher instruction and student achievement: A meta-analysis*, at [gtlcenter.org/sites/default/files/LF-2022-Standards-for-PL-Meta%20Analysis%20Report\\_Final.pdf](https://gtlcenter.org/sites/default/files/LF-2022-Standards-for-PL-Meta%20Analysis%20Report_Final.pdf)

research included this innovative methodology because innovation in research methodologies is one way to address inequities and lack of transparency in research (Pigott et al., 2021), and it is important to document the link among professional learning, teacher practice, and student outcomes, even though this link can feel at times like common sense for those in the field.

The AIR researchers concluded, “Investments in professional learning can yield meaningful improvements in student achievement, and the benefits for students come through improvements in instruction” (Garrett et al., 2021).

The AIR meta-analysis report includes an annotated bibliography that is a treasure trove of professional learning studies. Additional analyses and technical papers with further detail about the research will be published in the next year.

## MISSING OR UNDERVALUED CONCEPTS IN RESEARCH

Equity as an aspect and outcome of professional learning is an important and yet underresearched aspect of Standards for Professional Learning. This emerging area of interest is reflected in the research about instructional approaches that encourage more equity in teaching and learning.

For instance, strategies such as culturally responsive teaching, which incorporates students’ cultures into instruction, are showing promise in improving students’ academic and social-emotional outcomes, affirming their identities, and helping them develop skills to identify and combat inequities. However, more rigorous research is needed to complement descriptive studies, better understand what effectiveness means and looks like, and articulate what components lead to better outcomes for students (Bottiani et al., 2017; Hill, 2020). This attention to equity is relevant also in calls for expanding the research that is traditionally valued in the conversation about professional learning and teaching (Kaplan et al., 2020).

## A FORWARD-LOOKING RESEARCH AGENDA

Professional learning represents a significant investment for education systems. Yet it remains challenging to monitor at scale and challenging to isolate what leads to real improvements, particularly on student outcomes (Garet et al., 2016; TNTP, 2015).

The thorough review of the research related to the concepts and strategies in Standards for Professional Learning led Learning Forward to better understand the research landscape, offering insights into what kinds of studies are needed as we seek to build systems of comprehensive and effective professional learning in many contexts.

Research methods have changed and improved over the past decade, and new evidence is always emerging about teaching (Papay & Kraft, 2015). As described above, AIR's recent meta-analysis demonstrated this innovative approach to research methodology, employing a mediation analysis to support the theory of action that professional learning improves educator practice, which, in turn, improves student outcomes.

Learning Forward participates in a range of research projects related to standards concepts and implementation with the goal of increasing the evidence base about standards-based professional learning. Our goals in such partnerships are to actively engage in research related to professional learning, stay current and informed, and represent educators' need for practical applications of research and findings (Garet et al., 2011).

In addition, Learning Forward advocates for a balanced understanding of the types of research and methodologies that contribute to the evidence base about professional learning. For instance, data and findings from qualitative and mixed method studies provide critical descriptions of professional learning that control group studies often leave unexplored.

Emerging methods such as those related to improvement science offer real-time information about whether professional learning strategies are having their intended effect in a range of contexts and whether the changes are actual improvements for educators or students (see Bryk et al., 2015).

Learning Forward is committed to continuing to strengthen the evidence base about high-quality professional learning that has a positive impact on educators and students. Here are some questions for a future research agenda.

*What does it mean to implement the standards with fidelity?  
What are the impacts?*

The release of the revised standards is an opportunity to gather baseline data now, then study the implementation of standards in states, districts, and schools. Studying the implementation of a range of professional learning strategies that are tied to and based on the standards as a framework is an opportunity to gather evidence to expand the knowledge base. A formal study of district- or system-level implementation is an important next step following on the AIR literature review and meta-analysis.

*How has job-embedded professional learning changed over the last decade?*

A 2010 review of research by Croft and colleagues highlighted the benefits of job-embedded professional learning,

which addresses authentic and immediate problems of practice, takes advantage of time in the workday, and is grounded the day-to-day work at the school or classroom level.

Because so many changes have occurred in instruction and professional learning over the past decade, especially as it relates to the way educators collaborate and use technology, an updated understanding of what it means for professional learning to be job-embedded would help those new to the field appreciate its importance.

New research could look at how educators' needs related to high-quality curriculum and instructional materials have changed over the years, or how and when virtual professional learning is appropriately job-embedded, and what an updated definition of job-embedded professional learning looks like in practice.

*What are the conditions that lead to beneficial choices about professional learning?*

Studies of new curricula or initiatives often leave out many of the details about how professional learning was initiated, conducted, and supported over the period of time covered in the research. There are often unanswered questions about the design of the sessions, how facilitators were selected, trained, and evaluated, and how leadership supported professional learning through policy and resources.

The field would be greatly served if there were some consistent and transparent way of describing professional learning in research studies. Standards for Professional Learning, with the frames of rigorous content for each learner, transformational processes, and conditions for success, would be a perfect structure for a uniform description of professional learning in studies focused on teaching and learning.

Learning Forward stands firm in our commitment to help educators understand how to conceptualize, support, implement, and document the impact of professional learning so that it leads to excellent outcomes for educators and students. Therefore, Learning Forward will continue to sustain and strengthen our connection to and investment in research and evidence about high-quality professional learning.

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# Additional resources

## FOR STANDARDS FOR PROFESSIONAL LEARNING

Visit [standards.learningforward.org](https://standards.learningforward.org) to find resources useful for sharing, studying, and implementing Standards for Professional Learning. Resources include:

### **Standards for Professional Learning**

Read the full contents of the standards themselves, with an overview of the three critical constructs in each standard, links to related standards, and references to selected resources.

### **Role-Based Action Guides**

Created for educators in multiple roles, Action Guides are intended to support educators in understanding and fulfilling their responsibilities in putting Standards for Professional Learning into motion in their contexts. Each Action Guide outlines high-level responsibilities and includes a tool to help educators identify the first steps they can take to implement standards. There are Action Guides for the following roles:

- State commissioner
- Superintendent
- System/central office
- Principal
- Coach
- Teacher
- External partner

Action Guides for those in coach, system/central office, principal, and external partner roles also include Innovation Configuration maps, which describe in detail specific behaviors educators undertake in fulfilling their responsibilities related to standards.

### **Quick-Start Guide**

This four-page overview is ideal for sharing Standards for Professional Learning widely with stakeholders and can serve as an introductory piece across schools, systems, and other contexts.

### **Policy Tools**

Explore how to advance Standards for Professional Learning in policy at any level and why standards in policy matter.

Some resources are available in full to anyone who visits [standards.learningforward.org](https://standards.learningforward.org), while others require membership in Learning Forward.

Learning Forward is committed to building every educator's capacity to establish and sustain high-quality professional learning so that every student has access to high-quality teaching and learning.

As the only membership association solely focused on effective professional learning for K-12 educators, Learning Forward serves thousands of members and subscribers while simultaneously influencing the broader education field. Learning Forward works at all levels of the education system.

Information about standards, membership, services, or products is available from:

Learning Forward  
504 S. Locust St.  
Oxford, OH 45056  
Telephone: 800-727-7288  
Email:

[office@learningforward.org](mailto:office@learningforward.org)  
[www.learningforward.org](https://www.learningforward.org)