Education Quality and Continuous Improvement Framework:

Research, Resources, and Support for Continuous Improvement Planning

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Executive Summary

Agency of Education Theory of Action for Continuous Improvement

If the AOE is fully committed to continuous improvement for Vermont Education Quality Standards and Every Student Succeeds Act expectations, *then,* we will operate from a shared vision and collective responsibility, and apply a systemic approach to continuous improvement by:

- using quantitative and qualitative data, evidence, research, and current technology for ongoing assessment and evaluation of the efficacy of our work;
- co-operating and collaborating across divisions on projects, professional projects, policy development and implementation efforts, and field technical assistance and professional learning;
- applying a project-management approach to strategically plan and adapt our work to meet the changing needs of the field;
- engaging in partnerships with community members, families, institutes of higher education, other governmental agencies, and other relevant stakeholders;
- supporting school systems through consistent and transparent messaging, useful and timely resources, and differentiated coaching or professional learning for improvement efforts; and
- ultimately helping educators improve achievement and well-being for ALL Vermont learners

So that we may assist school systems with their efforts in continuous improvement, the Education Quality Assurance Team—in collaboration with other AOE teams—has synthesized prominent field research and assembled a collection of actions, guiding questions, resources, research summaries, and supports for Vermont LEAs and school systems. This document is the result of our efforts. It includes a framework for delivering quality education and for continuously improving educational practices and processes with the ultimate goal of providing equitable and quality education to all Vermont learners. The framework will be updated as needed.

Who Should Use This Framework?

The framework is designed to provide resources, information, and strategies for continuous improvement. Appropriate users of this guide will be familiar with the term "continuous improvement," have knowledge about the data that school systems are required to collect, and have some understanding of how to use data in a service delivery or management setting.

Technical assistance staff or consultants may find the [Comprehensive Needs Assessment Toolkit](#) a helpful resource for working with leaders at the LEA and/or school levels who are trying to build a learning culture, using data to improve program quality and equity, or need suggestions about ways to involve staff in data use. Educational leaders and individuals attempting to promote data use may find the comprehensive needs assessment a helpful process for providing examples and tips to staff about the benefits of data analysis, involving more staff in data inquiry, and thinking about how to make time for data inquiry and use.

It is recommended that users read through the entire framework to decide which parts are most useful to their organization or situation. The tools and resources throughout may be used separately, but the people introducing them to others should have the framework background, to be sure they are appropriately applying the processes in continuous improvement. Guiding questions are embedded throughout the

document. These questions are intended for those engaged in the work of continuous improvement—at the SEA, LEA, or school-level. A *Continuous Improvement Plan Template* is included in the Appendices section.

1.0 Continuous Improvement Planning

1.1 Approach to Continuous Improvement

Building capacity for improvement relies on strong relationships between improvement at the school, district, and regional level (Hatch, 2013). For most teams at the Agency of Education, the intent is to build capacity for continuous improvement at the supervisory union/district level, rather than focusing innovation and improvement exclusively on a select group of schools. In order to assist supervisory unions/districts in helping their schools improve, the Education Quality Assurance Team is adopting an improvement science approach—and a corresponding theory of action—for supporting Vermont school systems.

Improvement science is an approach for improving quality and productivity in diverse settings, producing knowledge about what works, for whom, in which circumstances (Cohen-Vogel, Wagner, Allen, Harrison, Kainz, Socol, & Wang, 2015). It is a form of study that applies research methods to better understand the methods, theories, and factors that facilitate or impede quality improvement (Health Foundation, 2011). In education, this approach involves the disciplined use of evidence-based methods to improve systemic effectiveness, which includes studying problems of practice and their underlying systems and processes (Herrera, 2016). To achieve education quality and sustain continuous improvement educational systems must determine what works among diverse educators teaching varied populations of students in varying organizational contexts (Bryk, 2015). Correspondingly, in this framework for continuous improvement, supervisory unions/districts and school systems determine problems of practice, apply appropriate changes. In order for quality improvement to be continuous, it must be ongoing, and infused into the daily work that individuals are doing throughout the system (Park, Hironaka, Carver, and Nordstrum, 2013). In contrast to an external accountability motive, a continuous, quality improvement approach involves connecting systemic process/practices and outcomes; focusing on problems of practice; contextualizing solutions; and focusing on *internal accountability* among all members of the organization as a primary driver of improvement (O'Day and Smith, 2016). When applying methodologies congruent with improvement science, such as Lean, Six Sigma, Implementation Science and Plan-Do-Study-Act cycles of learning, the underlying philosophy is that *all* processes can be continually improved (e.g., LeMahieu, Nordstrum, and Greco, 2017). Such approaches are aimed at preventing the trend in which highly rated schools become complacent, while low performers may be discouraged from getting the nuanced data they need to improve.

As a comprehensive approach to continuous improvement, improvement science principles are congruent with the ongoing efforts in which many Vermont schools are engaged, such as implementation science. By adopting an improvement science approach, school systems can apply *Plan-Do-Study-Act* (PDSA) cycles to innovate, test, review, and revise improvement strategies (e.g., Deming, 1993; Langley et al., 2009). The PDSA cycle is a scientific method for making hypotheses about the efficacy of proposed solutions on standard work, processes and outcomes (LeMahieu, Nordstrum, and Greco, 2017). These cycles are customized for the purposes of piloting innovations or interventions (in the pilot phase of improvement), as well as fully embedding the change into the standard work of the system (during the implementation phase). The Institute for Healthcare Improvement, which has been contributing to the knowledge base for many years, offers a side by side illustration of the practices unique to each and common to both.

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1.2 District and School-Based Plans

As indicated in the Education Quality Standards, Supervisory Unions and Districts are required to submit a continuous improvement plan to highlight broad priorities and goals at the LEA level. Each school is required to submit a continuous improvement plan reflecting school-based improvement efforts, which are congruent to LEA priorities. Although school-based plans will reflect problems of practice and variations specific to each context, these plans should also be aligned with SU/SD level priorities and initiatives, based on the SU/SD level needs assessment. Schools and SUs/SDs should conduct/revise needs assessments at least yearly and make adjustments to change ideas accordingly. **Figure 4** illustrates the parallel nature of these plans. A sample plan is included in Appendix B and the *Continuous Improvement Plan Template* is located in Appendix A.

Figure 4: Supervisory Union/District Plans and School-Based Plans

SU/SD Plan	School-Based Plan

• Needs Assessment including:
  • Priority Problems of Practice and Root Causes (for SU/SD wide improvement)
  • Theory of Action (for SU/SD wide problems of practice)
• Goals and Measures of Impact (specific to SU/SD problems of practice)
• Plan Details and Updates
	• Needs Assessment including:
	  • Priority Problems of Practice and Root Causes (for school priorities congruent with SU/SD priorities)
	  • Theory of Action (for school-based problems of practice)
	• Goals and Measures of Impact(specific to school-based problems of practice)
	• Plan Details and Updates

1.3 Support for Continuous Improvement Planning

Building Capacity and Culture for Continuous Improvement

Organizations must build the capacity and the culture for continuous improvement to become part of their embedded practices. A continuous improvement culture requires a commitment to ongoing collaborative inquiry with multiple sources of data to ensure internal accountability. Appropriate structures and practices must be in place to foster this commitment. The purpose of the continuous improvement process is to use cycles of learning to monitor and document the impact of strategic improvement actions/changes. Improvement decisions should be based on data-driven needs assessments and https://education.vermont.gov/documents/state-board-rules-series-2000. In collaboration with other AOE teams, the Education Quality Assurance Team will apply a state support plan for coaching LEA's in continuous improvement. This plan focuses on six improvement principles recommended by Bryk, Gomez, Grunow, and LeMahieu (2015):

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1. Making the work problem-specific and user-centered
2. Focusing on variation in performance
3. Understanding the system that produces the current outcomes
4. Examining relevant measures for improvement
5. Using disciplined inquiry
6. Accelerating learning through networking

These principles are the foundation for problem-solving, along with considering three fundamental questions, based on the work of Langley, Moen, Nolan, Nolan, Norman, and Provost (2009)

1. What are we trying to accomplish?
2. How will we know when a change is an improvement?
3. What change can we make that will result in an improvement?

The principles of improvement science apply to the entire scope of the continuous improvement process (from planning and piloting to implementation and spread). Figure 1 illustrates the phases of the continuous improvement process, as well as where PDSA cycles might occur throughout the process. A *Continuous Improvement Plan Template* is located in Appendix A.
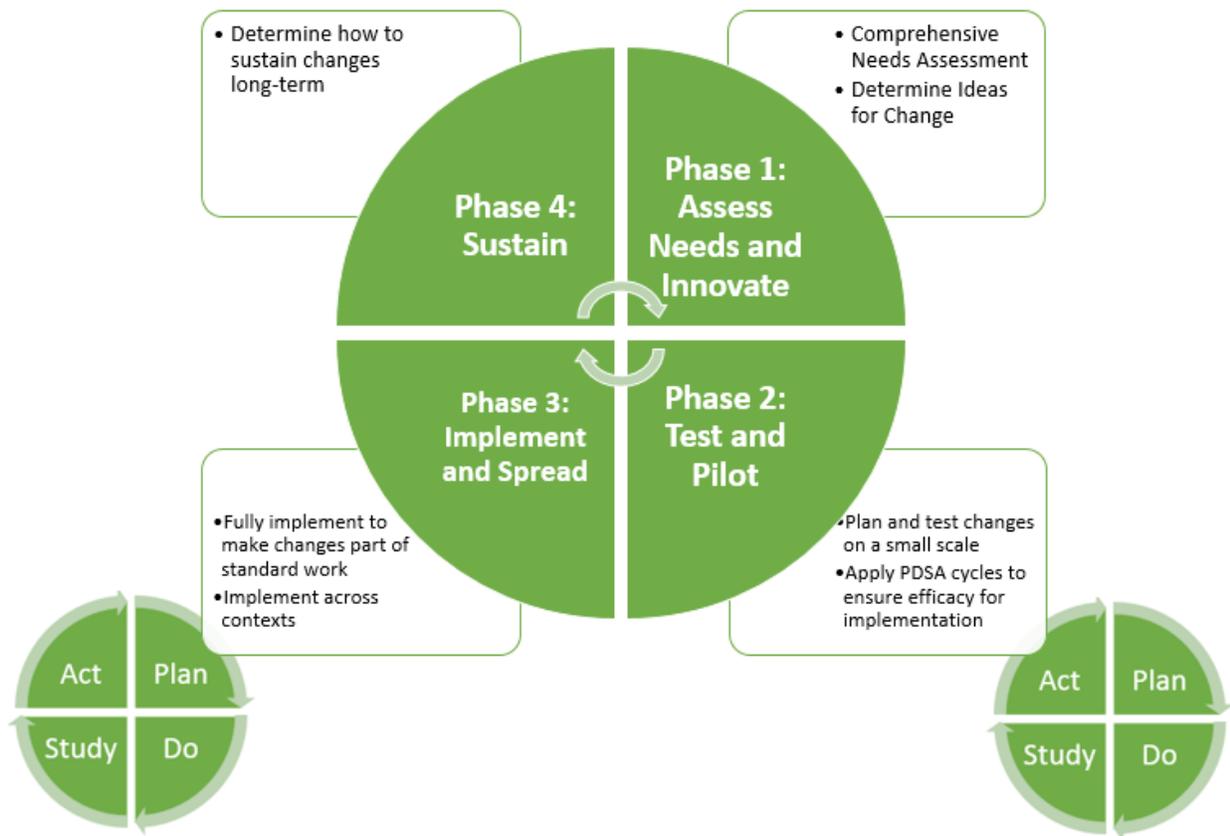

Figure 1: Phases of the Continuous Improvement Process

The subsequent pages include actions, guiding questions, and resources for each phase of continuous improvement planning.

- **Actions:** During each phase there are specific actions that school systems will execute
- **Guiding Questions:** Suggested questions to shape effective work
- **Resources:** Tools that can support school systems during each phase of work

Actions for Building Capacity and Culture
Organizing for Continuous Improvement (Optional Checklist)
Develop an understanding of the improvement principles, *the* three fundamental improvement questions, *and the Build knowledge of* PDSA cycles of improvement

Guiding Questions for Building Capacity and Culture
- Guiding questions are embedded in the checklist and framework in the above actions section.

Resources for Building Capacity and Culture
- Organizational Conditions for Continuous Improvement
- A Culture of Continuous Improvement
- The 6 Core Principles of Improvement

Phase 1: Assess and Innovate

Key to any form of improvement planning is a comprehensive needs assessment. A comprehensive needs assessment is a type of structured decision-making and serves as the initial phase in continuous improvement planning. This self-assessment process is intended to promote a culture of reflection, collaborative inquiry, deep learning, and shared responsibility for continuous improvement at the school and LEA level. The needs assessment considers a range of needs and problems of practice. During this process, school systems explore assumptions about problems of practice by analyzing data from multiple sources, considering the beliefs and practices that are problematic (Mintrop, 2016). During a needs assessment, consider the following components: a shared vision; representation from stakeholders; broad areas of focus; identified problems of practice and root causes; and a theory of action. Underlying the entire process is a strong commitment to collecting and analyzing multiple sources of data and making informed, collective decisions based on these analyses.

Actions for Phase 1
Conduct Needs Assessment: The following list includes the component parts of the needs assessment:

A. *Shared Vision:* In developing or strengthening the vision, teachers, families, and community members collectively talk about their desires for students and community, thinking and acting, "with the power they already have, about the things that are important to them." (Senge, Cambron-McCabe, Lucas, Smith, Dutton, and Kleiner, 2000).
B. *Collaborative Stakeholders Represented:* The needs assessment team should include necessary and diverse stakeholders representing all parts of the system, including school board members, students, families and community members.
C. *Broad Area(s) of Focus Based on Data Review:* Describe the broad area(s) of focus, directly related to long-term goals and the 5 component areas of EQS (Academic Proficiency; Personalization; High Quality Staffing; Safe, Healthy Schools; and Financial Efficiencies). Describe your current state and your goal state for your broad areas of focus.

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D. *Identify Priority Problems/Problems of Practice*: Based on the identified broad focus areas, dig deeper into the data to determine the focused, learner-centered, prioritized problems for which you intend to seek innovative solutions/interventions to reach your goal state.

E. *Root Cause Analysis Results:* Provide a brief narrative describing the results of your root cause analysis for prioritized problems; include the major factors contributing to each problem.

F. *Theory of Improvement/Action:* Based on your needs assessment results, data analysis, and research support, define your [theory of improvement](#)/action for this goal. A working theory of improvement includes a well-specified goal and a working theory of high-leverage change that we believe will lead to that goal. A driver diagram is an improvement tool used to visualize communicate that theory. It represents the shared theory of improvement, building upon knowledge gained from research, observation and experience. The drivers identify the elements in the system that are necessary and sufficient for achieving intended goals (Bennett and Provost, 2015). The diagram contains information about the problem of practice, intended goals, primary (and optionally secondary) drivers, and the agreed upon change ideas that are predicted to improve the system; it should be dynamic and change as new evidence is collected. A good theory of improvement/action: focuses efforts on the highest leverage parts of the system; is collectively owned by those engaged in the improvement efforts; and is revised as needed.

G. *Determine Ideas for Change:* Assess and understand current state of organizational performance; analyze data; Identify gaps between current and goal state; access the knowledge base/conduct research; identify potential evidence-based strategies, establish goals, measures, strategic objectives and actions that support core priorities. Address the overarching questions:
   - **What do we want to accomplish?** Describe prioritized Goal(s). Focus on changes that alter standard work/processes. Be sure they are student-centered, measurable, and meaningful to your work and your context.
   - **What change can we make that will be an improvement?** Plan and describe your evidence-based actions for improvement. Focus on high-leverage changes that affect the standard work/processes within your context. These include systemic changes that may fundamentally improve performance across classrooms and school systems. Your changes should be detailed enough to test during your iterative cycles of learning.
   - **How will we know when a change is an improvement?** In specific terms, describe the measures and specific data you will use to determine results and success

Guiding Questions for Phase 1
   - Are current strategies, tactics, and behaviors consistent with the current mission, core beliefs, and core values?
   - What elements are easy to see and confirm their presence in the building?
   - Which elements are not visible and require investigation to confirm their presence?
   - If the building were observed for days, where would the vision have been seen in action?
   - What might be observed that could be considered incongruent with the vision?
   - How do we understand the problem(s)? What are we trying to accomplish?
   - What do we know about our current situation? What are the user experiences (e.g., interviews, surveys)?
   - What information do we have available?
   - What trends and issues do the data reveal?

- What would success look like?
- Based on our data overview, what are our systemic strengths and areas of focus? Focal areas are directly related to EQS components and state long-term goals.
- What changes can we make that will result in an improvement?
- How will we know that our change *is* an improvement?
- What will success look like? How will it be measured?
- What is the relationship between your change ideas and your goals/outcomes (Drivers Diagram)?
- What are your assets, needs, and drivers (elements necessary and sufficient for the intended goal)?
- What strategic actions must we take related to these changes? Why?
- What research/data are we using to justify these decisions?
- What evidence-based processes, curriculum, pedagogy, and assessments align with our plans?
- What impacts do we expect and by which criteria we will measure impact?
- How will we monitor progress along the way?

Resources for Phase 1
- [Six Improvement Principals](#)
- [Data Wise Process](#) and [Free Online Course](#)
- [Using Driver Diagrams to Build a Theory of Improvement/Action](#)
- [Driver Diagram Template](#)
- [The Data Informed District: Research on Using Data to Inform Practice](#)
- [Improvement Science Tools from High-Tech High Graduate School of Education](#)

Phase 2: Test and Pilot

This phase involves planning and testing the agreed upon changes for improvement; these changes should be directly related to needs assessments, the Education Quality Standards, and the three overarching questions:
- *What do we want to accomplish?*
- *What change can we make that will be an improvement?*
- *How will we know when a change is an improvement?*

Figure 2 depicts the PDSA improvement cycle for this pilot/testing phase of the improvement process. These PDSA cycles are analogous to mini-experiments during which educators articulate improvement changes, carry out the change, study the results, and act decide how to proceed (e.g., adopt the change, adapt the change, or abandon the change). The overall arch of this phase is an improvement investigation in which educators learn quickly and affordably which interventions work and, later, how to adaptively integrate them to attain quality outcomes reliably at scale (Bryk, Gomez, Grunow, and LeMahieu, 2015).

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Figure 2: PDSA Improvement Cycle for Test/Pilot Phase

Plan
- Review goals (connected to EQS) and determine change ideas that will most impact student learning
- Explicate improvement hypothesis, plan how you will test the selected/designed change (with supporting research and evidence), and determine how you will measure impact of the planned changes.

Do
- Test your planned change.
- Collect data, and document progress.

Study
- Analyze data and measure against goals and predictions
- Summarize learning and determine necessary revisions.

Act
- Adapt, adopt, or abandon the change, in response to data and evidence gathered through data analysis/monitoring/reviews.
- Plan for the next cycle (or move to implementation phase, if ready)

Actions for Phase 2
Plan and test changes for improvement on a small scale:
- Apply PDSA iterative cycles to ensure efficacy for implementation; these tests should reflect the main cause and effect relationships reflected in the driver diagram.
- Align action at all levels of the organization.
- Educate and train staff.
- Communicate information/expectations.
- Embed appropriate professional learning.
- Collect relevant data (e.g., assessments, surveys, interviews, and observations of instructional practice) that will assist during the next phase of the cycle.
- Monitor progress and evaluate results; explain how you monitored the progress of your change against your goals and objectives. What can you conclude?

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- Adapt, adopt, or abandon your change and explain rationale for adaptation, adoption, or abandonment.

Guiding Questions for Phase 2
- How will we carry out our change idea?
- What resources and knowledge do we have/need?
- What professional learning needs to happen?
- How will we strengthen a collaborative culture for professional learning to build capacity for precision in pedagogy and personalized learning, through coaching, modeling, partnerships, professional learning communities, instructional rounds, lesson study, etc.?
- What systemic changes will we make in the following areas: instructional systems and practices; organizational and performance management routines; culture; staffing; scheduling; evaluation processes; professional learning; student safety and climate; and family and community engagement
- What do the data reveal?
- How did our strategic actions impact student achievement and well-being? What is working, for whom, in which circumstances?
- Was the change an improvement?
- What is not working? Why?
- What adjustments may need to be made? How did our strategic actions impact student achievement and well-being? What is working, for whom, in which circumstances?
- Was the change an improvement?
- What is not working? Why?
- What adjustments may need to be made?

Resources for Phase 2
- [Evidence-Based Actions for Improvement](#)
- [Evidence-Based Improvement Tools](#)
- [Guides for Identifying Evidence-Based Interventions for School Improvement](#)
- [PDSA Worksheet](#)
- [Directions and Criteria for Federal Program Grant Applications](#)

Phase 3: Implement and Spread

This phase involves making plans and decisions for full implementation and for spreading the change across classrooms and/or schools. Figure 3 depicts the steps in applying the PDSA cycle for effective implementation, fidelity of implementation, and for scaling up the innovation/change to additional settings. These steps are described below.

Figure 3: PDSA Cycle for Implement and Spread Phase

Plan
- identify barriers or challenges to full implementation; specify the plan to fully implement programs or innovations in making them standard work/processes; specify monitoring methods and measurements

Do
- carry out the strategies or plan as specified to address the challenges,

Study
- use the measures identified during the planning phase to assess and track progress and fidelity, and

Act
- make changes to the next iteration of the plan to improve implementation and ensure fidelity for scaling up. (Adapted from: National Implementation Research Network's Active Implementation Hub, Framework 5: Improvement cycles)

Actions for Phase 3

Fully implement to make changes part of standard work/practices/processes: Implementation involves making the change(s) standard practice in your system. Only implement changes that you are sure result in improvements (Langley, Moen, Nolan, Nolan, Norman, and Provost, 2009). Explain how you will implement, scale, and sustain the successful practices and processes tested during this improvement cycle; include personnel, financial resources, scheduling, and potential organizational/structural modifications. _Spread implementation across contexts:_ Engage relevant staff in professional learning, and ensure the structures and organizational factors are in place for systemic change at scale.

Guiding Questions for Phase 3
- Do we have full system support for the changes we want to implement?
- Do we have a clear and common understanding about how to implement this change effectively?
- Do we have the people and systems prepared to implement this change?
- Have we considered how the implementation drivers (organizational, competency, and leadership) will impact our efforts?
- How will we allocate resources and provide training to ensure fidelity of implementation?
- Have we demonstrated that increased equity and/or improved student outcomes are resulting from this change (is this change actually an improvement)?

Resources for Phase 3
- Implementation Framework and Tools

- SWIFT Tools

Phase 4: Sustain

This phase involves planning and making decisions about how resources will be allocated for sustainability, as well as how your organization will sustain the standard work of continuous improvement. One way to sustain your efforts and an ongoing commitment to quality education and continuous improvement is to truly transform your educational system into a learning organization. In learning organizations, members continuously expand their capacity to create desired results. A learning organization engages in disciplined inquiry to collectively enhance abilities, develop shared understandings, and realize valued outcomes and visions. There is no simple formula, as every organization is unique, but deep learning can take place when new skills, awareness, and attitudes reinforce each other (Senge, Cambron-McCabe, Lucas, Smith, Dutton and Kleiner, 2012, p. 71). Learning disciplines which enable organizational learning include: *personal mastery & shared vision*, which represent individual and collective aspiration; *mental models and team learning,* which involve the practice of reflective thinking and generative conversation; and *systems thinking,* which involves the knowledge and practice for recognizing and managing complexity (Senge et al., 2012).

One hurdle to launching innovation and continuous improvement within an educational organization might be attachment to tradition and traditional ways of teaching and learning. For leaders, keep this in mind and create the conditions that challenge traditions, based on data. Promote and support structures, processes, and practices in which educators can engage in embedded, peer-constructed professional learning opportunities and data inquiry sessions, and provide the necessary time to engage in such endeavors.

Actions for Phase 4
Determine how to sustain changes long-term: Use disciplined inquiry system-wide to manage the change, continuously assess programs and instruction, and allocate resources appropriately.

Guiding Questions for Phase 4
- How are we supporting and enabling communities of practice, inquiry, and ongoing professional learning?
- Do our teachers and staff have access to personal learning networks in our school system, region, country and the world?
- Do we support continuity of learning outside our premises?
- Is the current allocation of resources and budget appropriate for the vision?
- What guidelines and timelines are needed to achieve our goals?
- Do we have a competent, organized system in which we can continue to apply improvement principles and actions for future changes?
- Are we continuously improving and aligning the changes within the system?

Resources for Phase 4
- Coherence: The Right Drivers in Action for Schools, Districts, and Systems
- Coherence Framework from the Public Education Leadership Project at Harvard
- Framework for School Transformation (Microsoft Education)
- Partners in Educations: A Dual Capacity Building Framework for Family-School Partnerships
- Seven Principles of Sustainable Leadership (Andy Hargreaves and Dean Fink)

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- [Peter Senge on Systems Thinking in Schools (video)](#)
- [Our Journey to Awesome: Park Manor Public School (video)](#)

2.0 Research Support for Quality Instruction and Continuous Improvement

2.1 Supporting Research

A scan of recent and ongoing research efforts surfaces various frameworks for systemic improvement and coherence. These frameworks include essential, high-leverage supports, processes, and practices that relate to the broad areas in [Vermont's Education Quality Standards](#). This section represents a synthesis of research related to high-leverage processes and practices and how they relate to the five broad areas from EQS: *Academic Proficiency; Personalized Learning; High Quality Staffing; Safe and Healthy Schools; and Financial Efficiencies.* Taken together, the findings and recommendations can help guide a statewide system of support for education quality and continuous improvement, serving to:

- help supervisory unions and districts identify areas of strength and areas needing improvement;
- promote inquiry and internal accountability focused on personalized, proficiency-based learning and high levels of achievement for all learners;
- support educators in making effective improvement planning decisions; and
- build coherence in and across supervisory unions and district.

Academic Proficiency. Student learning and achievement depends on effective teaching. Deep learning, pedagogical precision, and improvement of practice is a priority of effective schools, and collaborative learning opportunities are directly connected to a deep understanding of the process of learning and improvement of the teaching process (Fullan, Hill, & Crevola, 2006). Privacy of practice produces isolation and isolation is the enemy of improvement; therefore, leaders must create conditions where collective scrutiny of practice and collective learning is expected (Elmore, 2004). School systems can create organizational infrastructures that promote collaborative learning. These opportunities should allow for collective capacity building in the areas of curriculum, instruction, and assessment, including developing shared agreements about standards, criteria for proficiency, and high-yield instructional practices from evidence-informed sources.

Personalized Learning. Personalization is a learner-centered approach to education (Leadbeater, 2002). Personalized learning is systems and approaches that deepen student learning by incorporating each student's interests, strengths and needs - including student voice and choice in what, how, when and where they learn - to achieve the goals of active engagement, academic success, and preparation for post-secondary opportunities. Personalized learning and personalized instructional approaches are critical to students in kindergarten through grade 6 as well as grades 7-12. In personalized learning environments, school leaders and educators respond to student learning and motivational needs (Fullan, Hill, & Crevola, 2006), predictably bringing student ownership, choice, and voice to the foreground during their learning experiences. In a student-centered learning climate, educators provide rigorous learning opportunities, along with the support needed for *all* students, so that students will persevere, believe in themselves, and achieve (Bryk, 2010). A multi-tiered system of supports provides for personalization through meeting the academic and behavioral needs of each and every child.

Safe, Healthy Schools. Providing students with a safe and orderly environment is a most basic prerequisite for learning (Bryk, 2010). Student achievement is often dependent upon educators working cooperatively on instruction and maintaining a positive school climate (Sebring, P.B., Allensworth, E., Bryk, A.S., Easton, J.Q., and Luppescu, 2006). Additionally, strong family and community engagement has been found to be directly linked to student motivation and participation (e.g., Bryk, 2010). Schools serving communities with limited social resources need to provide robust internal supports for students (Sebring et al., 2006).

The Education Quality Standards aim to ensure a well-rounded education for all students, in part by promoting a multi-tiered system of supports within and across educational organizations. The [VTmtss Field Guide (2019)](#) describes the State's guidelines for multi-tiered system of supports in Vermont public schools; requiring an Educational Support Team (which includes families) to respond when students evidence difficulty in academic, social or emotional areas. The VTmtss Framework serves as a decision-making tool to ensure tiered supports, practices and interventions are equitable and sustainable, layer tiered practices and intervention supports to reflect the unique profile of each learner's academic, social and emotion needs (e.g. practices within a restorative approach or the PBIS Framework), provide a variety of tools to assess the strengths and areas of growth of a system, and uses system data to support the goals of Continuous Improvement Plans.

High Quality Staffing. Improvement involves change, and change involves learning (Fullan & Miles, 1992). Professional competence and capacity building are at the heart of professional learning goals and ventures. A collaborative culture and appropriate organizational infrastructure is necessary to facilitate the deep learning both educators and administrators require to make significant educational improvements. Moreover, research indicates that social capital (e.g. educators frequently conversing with and learning from trusted peers) can be a significant predictor of student achievement gains, above experience and ability. (Leana, 2011). Professional learning--for educators and school leaders--should be connected to core priorities, consistent with needs reflected in the data and needs assessments, and connected to educator/administrator needs. The *[Vermont Guidelines for Teacher and Leader Effectiveness](#)* (Vermont Task force on Teacher and Leader Effectiveness, 2009) serves as a useful guides and reminders of core standards, priorities, and expectations for educator and leader effectiveness.

Financial Efficiencies. The highest performing education systems are those that combine equity with quality. These systems give all children opportunities for a good quality education and help all children. This work entails developing systems level and school level policies to promote equity, quality and fiscal responsibility. It also requires determining how to support disadvantaged students and schools, as improving opportunities for them benefits education systems and societies as a whole (OCED, 2012).

Achieving equity and excellence requires sufficient resources that are distributed based on student need, not zip code, and that are efficiently used. (US Department of Education 2013). A meaningful educational opportunity requires that local education agencies make sure all students receive the resources to achieve rigorous academic standards and obtain the skills to compete in the economy and participate capably as citizens in a democratic society. Students who have enriching school experiences will be more likely to stay in education and successfully transfer to the labor market. Those who struggle at early stages but receive adequate, timely support and guidance have higher probabilities of finishing, despite any difficulties in their family or social background. (OECD, 2012).

2.2 Statewide Support System for Continuous Improvement

Finally, additional research on the key features of continuously improving systems (Darling-Hammond and Plank (2015), will help guide the Educational Quality Assurance Team's efforts to support school systems sustain capacity building efforts for continuous improvement. These features include:

Learning Supports. In collaboration with other AOE teams, the Education Quality Assurance Team is committed to advocating a system of continuous improvement which is grounded in reciprocal accountability at all levels--State, LEA, and School. In collaboration with other AOE teams, the Education Quality Assurance Team will apply a state support plan for coaching LEA's in continuous improvement. This plan focuses on the previously highlighted six improvement principles (Bryk, Gomez, Grunow, and LeMahieu, 2015):

1. Making the work problem-specific and user-centered
2. Focusing on variation in performance
3. Understanding the system that produces the current outcomes
4. Examining relevant measures for improvement
5. Using disciplined inquiry
6. Accelerating learning through networking

Information Systems. Data-driven inquiry is the basis for culturally responsive pedagogy. Key to any form of improvement planning is a comprehensive needs assessment**.** Needs assessments should serve as the foundation for the school-wide plan for continuous improvement. All strategies and activities should be informed by and aligned with the data it generates. Sources of data should consider structures, processes, and outcomes (e.g., Donabedian, 2005). Data analysis should drive student-centered curriculum development, instruction and assessment practices. A multi-tiered approach to instruction and intervention is a comprehensive and systematic process for assessing and maximizing the opportunities to learn for all students within any content area. It emphasizes the importance of effective, culturally responsive, and differentiated first teaching and effective early intervening supports for both academics and behavior for all students, prior to making a referral for a special education evaluation Vermont Statewide Steering Committee on Response to Instruction and Intervention (2014). Further, a balanced, comprehensive assessment system should include multiples measures for formative and summative assessments. For further assistance, please refer to the document: Strengthening and Streamlining Local Comprehensive Assessment Systems: Guidelines and Support for Leadership Teams.

Ongoing Review. In addition to ongoing progress monitoring of continuous improvement plans, regular self-assessments and reviews can provide a wide range of data clarifying areas of strength and areas for improvement. Additionally, Vermont's peer Integrated Field Reviews will provide an external, qualitative assessment of Vermont Education Quality Standards, including commendations, and recommendations for improvement.

Innovation and Evaluation. Many researchers believe that instructional systems should be conceptualized as ongoing research and development projects, or *practice-based research* (e.g., Fullan, 2006; Bryk et al., 2015). In such a system, refinement and continuous improvement is expected and practice drives theory, rather than the other way around. (Fullan, Hill, & Crevola, 2006)**.** Innovations may be developed in collaboration with colleagues, state personnel and researchers through networking opportunities.

Knowledge Sharing Strategies. Schools improve by collaboratively engaging in the process of co-constructing knowledge and skills (Elmore, 2004). Therefore, to sustain continuous improvement, networks can serve as collaborative *knowledge-sharing vehicles* within and across schools (Darling-Hammond & Plank, 2015). Schools

may share promising practices and engage in mutual learning opportunities by actively participating in networked learning communities (Katz, Earl, & Jaafar, 2009). Further, schools may actively participate in coordinated Networked Improvement Communities (NICs), working on common problems of practice and determining what works, for whom, under which conditions (Cohen-Vogel, Wagner, Allen, Harrison, Kainz, Socol, & Wang, 2015). These types of community learning opportunities are aligned with adult learning theory and standards for professional learning (Meister and Blitz, 2016). Further, they provide venues for strengthening social capital, building collective capacity, and co-constructing and applying knowledge/strategies for solving problems of practice.

Guided by the expectations of Vermont's Education Quality Standards and the data-driven needs of individual LEAs and specific schools, the ultimate purpose of the continuous improvement process is to strive toward equity and excellence for all Vermont learners. This entails an ongoing commitment to assessing needs, testing and adapting innovations/changes, implementing and scaling changes, and sustaining these changes as part of the standard work/processes in the organization. In contrast to an external accountability system, the continuous improvement approach described in this framework involves cycles of connecting local practices to local outcomes, in an ongoing process of learning-by-doing. The successful implementation and sustainability of these practices requires a commitment to a culture of improvement and data-driven inquiry, characterized by collaboration and a spirit of innovation. Appropriate structures and practices, such as those described in this document, must be in place to foster this commitment.

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Appendix A: Continuous Improvement Plan

[Continuous Improvement Plan](#)

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Appendix B: EQS Domains and Sub-Domains

Academic Proficiency
- o Curriculum Coordination
- o Local Assessment System
- o Instructional Practices
- o Proficiency-Based Learning

Personalization
- o Personalized Learning Plans
- o Flexible Pathways
- o Full Breadth of Courses
- o Student Voice and Choice

High Quality Staffing
- o Professional Development
- o Staff Evaluation
- o Leadership
- o Staffing

Safe Healthy Schools
- o MTSS
- o Social / Emotional Health
- o Physical Well-being
- o Physical Environment

Investment Priorities
- o Continuous Improvement
- o Student Data System
- o Financial Alignment
- o Communication

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Appendix C: Organizing for Continuous Improvement (Optional Checklist)

This optional checklist of preparatory actions is adapted from: Myung, J. (2014). *Building the Capacity for Districts to Continuously Improve.* Carnegie Foundation for the Advancement of Teaching. Retrieved from Carnegie Foundation Blog

Constancy of Purpose	
a. Collectively define the shared SU/SD vision.	
b. Define related SU/SD S.M.A.R.T goals (specific, measurable, attainable, relevant, and time-bound).	
c. Prioritize problems of practice and initiatives.	
d. Design a measurement system to monitor progress toward goals.	
e. Align and allocate resources to support the goals and related planned actions.	

A Culture of Improvement	
a. Assemble a leadership team and system to launch and sustain cultural transformation toward the SU/SD's purpose: • Secure the support of the school board and elements of the business community to accept that systems, not individuals, are responsible for the vast majority of problems observed. • Ensure senior leaders model their improvement orientation in their own work including sharing data about improvements based on their own leadership. • Utilize social media to "market" the process improvements and positive changes in the SU/SD/school.	
b. Empower members at all levels of the SU/SD — from classroom to LEA to iteratively improve. • Anticipate early resistance to this new approach — identify and enlist the support of building-level leaders. • Generate ideas for process changes close to where they occur. Workers engaged in the processes are best suited to identify opportunities for improving their day-to-day work. Recognize the pride workers take in doing their job well. • Capitalize on members' intrinsic motivation, desire to learn, creativity, and joy in accomplishment. • Include process improvement as a part of all job descriptions. • Hire for values and do not accept behaviors inconsistent with values. Human resource functions are aligned to the new culture change, including hiring, on-boarding, training, evaluation, succession planning, and reward and compensation plans. • Design learning plans for all staff to build up capabilities to engage in improvement work.	
c. Design for collaboration. • Provide structured opportunities for members to work together to improve common processes. • Share team reports widely throughout the organization.	

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| d. Recognize and celebrate improvement and lessons learned.
• Document and spread improvement in work processes.
• Make improvement work, inclusive of both data and student stories, visible throughout the organization (e.g., in classrooms, hallways, on websites).
• Distill and disseminate learning from both successful and ineffective improvement efforts. | |

Standard Work	
a. Map the processes for core SU/SD/school work – both the learning and the related support services.	
b. Create and implement methods and tools to gather stakeholder feedback on the mapped processes, include feedback from students, faculty, parents, community members, etc.	
c. Engage in explicit alignment activities in order to codify best practice in key operational functions.	
d. Develop a process to train others on the district's standard work.	
e. Collect stories of what works and codify that into knowledge products — "changes that work". Post artifacts and best practices on a common website location available to all SU/SD personnel.	
f. Use coaching support to adapt best practices to local context.	
g. Execute well-articulated and well-understood processes consistently.	

Quality Improvement Principles and Methodology	
a. Develop and execute an improvement capability plan throughout the SU/SD. • Define quality and continuous improvement in terms that make sense to all stakeholders. • Develop a common improvement methodology and vocabulary system wide. • Train workers at all levels of the organization in the selected improvement approach. • Implement improvement coaching as a core part of adult learning support. • Articulate core district aims and a process for setting local improvement project goals that are aligned. • Identify and map core processes associated with important project goals. Develop and use process measures that show how teaching and learning is being done.	
b. Test changes in improvement teams. • Carefully select initial sites for testing ideas, learning, and sharing what works to create high likelihood of early success (e.g., choose test sites with broadly trusted campus or administrative leaders). • Update Continuous Improvement Plans to reflect your improvement project goals, measures, actions, and outcomes • Allocate resources to achieve goals. • Document tests using tools of improvement that support discerning if a change is an improvement. (PDSA Worksheet in Appendix D) • Schedule system level reviews of improvement projects.	

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c. Design a system to implement and sustain ideas that work.
- Articulate a formal testing framework to implement initially successful changes at new sites.
- Document implementation adaptations required to make change successful in new sites.

Appendix D: Additional Continuous Improvement Planning Resources by Topic

Data Analysis

[Guide for Conducting a Comprehensive Needs Assessment](#)

[A Practical Framework for Building a Data-Driven District or School](#)

[Data Wise Process](#)

[Colorado Root Cause Training Kit](#)

Logic Models

[Center for School Turnaround Modules](#)

[Creating a Theory of Action](#)

Leadership

[Center for Educational Leadership](#)

[National Institute for School Leadership](#)

[Measuring School Turnaround Success](#)

[Principal Competencies](#)

[Performance Management Resource](#)

[Performance Management Toolkit](#)

Improvement Science

[Structured Networked Improvement Communities](#)

Evidence-Based Strategies

[IES Practice Guides and Intervention/Study Reports](#)

[Institute of Education Sciences (including WWC and Practice Guides)](#)

[Evidence-Based Interventions: A Guide for States](#)

[National Center on Intensive Intervention](#)

[SEDL](#)

[Center on Response to Intervention](#)

[USED Guidance for Using Evidence to Strengthen Investments](#)

Pedagogy

[Teaching Works](#)

[Stanford Center to Support Excellence in Teaching](#)

[The Teaching Channel](#)

[Success at the Core](#)

[Achieve the Core](#)

[Edutopia](#)

[Inside Teaching](#)

[KIPP Resource Library](#)

[Annenberg Learner](#)

[Center for Collaborative Education](#)

[Hattie's Meta-analyses](#)

[Learning Forward](#)

Systems Change

[Michael Fullan on Whole System Reform](#)

[SWIFT Playbook](#)

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Appendix E: Case Studies for *Test and Pilot Phase* PDSA Cycles

PDSA Case Study 1: Supervisory Union Multi-Tiered System of Academic Supports

Background from needs assessment (phase 1)
Based on their shared vision, which emphasizes high levels of achievement by all students, and the expectations for high-quality and tiered instruction described by Vermont's Education Quality Standards, the needs assessment team of Champlain West Supervisory Union decided that multi-tiered systems of academic support should be a focus for improvement planning. A review of each school's intervention data revealed disparities across the SU in the percentages of students receiving academic interventions. The team identified these discrepancies as a Problem of Practice and prioritized this problem based on its potential to impact student access to needed instruction.
A review of data binders, data team meeting agendas and meeting notes, as well as informal conversations, indicated varying practices for reviewing data and determining intervention placement. The team identified the absence of a uniform SU-wide data review process as a possible Root Cause for disparities in access to academic interventions.

What am I trying to accomplish?
> Improve equity in access to multi-tiered systems of academic supports by formalizing processes for data review and placement.

How will I know that my change is an improvement?
> Improvement will be evidenced by reduced disparities in the percentages of students receiving academic interventions.

What change(s) can I make that will result in improvement?
> The team proposed the development of SU-wide protocols and processes for use by data teams when reviewing student data and making placement decisions.

PDSA Cycle 1

Plan. With the help of an outside consultant, an SU-level committee developed uniform protocols and procedures for school data teams to use when determining placements for multi-tiered systems of academic supports.
Do. With coaching, school data teams implemented the SU-wide protocols, with each meeting during designated windows, reviewing uniform measures and using shared criteria for placement.
Study. At the end of the first semester, little change was observed in the disparate percentages of students receiving interventions from one school to the next.
Act. Convinced that the universal protocols had been fully implemented at each school, the needs assessment team re-examined the data, considering new potential Root Causes and open to the idea that their Problem of Practice might need to be redefined.
It was observed that unit test scores from the literacy and math core, the primary drivers for intervention placements, were far more disparate in the two buildings with the highest numbers of students in interventions than in the other three buildings. The team considered that rather than a need for more consistent data team processes, the Root Cause for the

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disparities in access to interventions might lie in classroom instruction. The issue might not be too little access at some schools, but rather too much access at others.

PDSA Cycle 2

Plan. The needs assessment team hypothesized that a need for more differentiation in the delivery of core instruction might be a Root Cause.

Do. The SU organized professional development around differentiation of core curricula during the second semester, and differentiation became a priority focus of principal walkthroughs and feedback / evaluations.

Study. Ranges of scores on unit tests became more and more consistent between schools as the second semester progressed, resulting in reduced placements in interventions SU-wide.

Act. The SU decided to continue the SU-wide professional development focus on the differentiation of core instruction into the next school year, as well as maintain the universal procedures for school data team work.

_____

PDSA Case Study 2: Elementary School Recess Behavior

Background from needs assessment (phase 1)

The needs assessment team at Chester A. Arthur Elementary School identified positive behavior as a focus area for a comprehensive needs assessment conducted last spring. This focus aligned with their shared vision, which emphasizes citizenship, as well as with components of Vermont's Education Quality Standards that describe safe, positive learning environments. Through an exploration of SWIS data from the two previous school years, the team determined that behavior write-ups during the recess period represented a disproportionately high percentage of total behavior incidents. The team identified behavior during recess as a Problem of Practice, and prioritized this issue due to its impact on not only student emotional health and safety, but on student availability for academic instruction.

What am I trying to accomplish?

Reduce the number of behavior incidents occurring during recess, creating a less stressful and more positive experience for students, reducing teacher and parent concerns and facilitating the transition back to the academic day.

How will I know that my change is an improvement?

The primary measures used to gauge improvement were the number of behavior write-ups generated during recess and the reports of classroom teachers concerning the success with which students transitioned back to class.

What change(s) can I make that will result in improvement?

The team initially hypothesized that the Root Cause of poor recess behavior was a lack of understanding about expectations. Their thinking shifted during the three PDSA cycles of improvement described below to a hypothesized need for more structure during the recess period.

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PDSA Cycle 1

Plan. As Chester A. Arthur is a PBIS school, the team hypothesized that perhaps a lack of student understanding of recess rules was a Root Cause of their problem. They proposed a refresher of the expected behaviors for recess and for transitioning back to class. The effectiveness of this action would be determined by the change (or absence of) in the number of behavior write-ups during recess at the end of a month, as well as through anecdotal teacher reports.

Do. School leadership organized a 15 minute re-teaching of expectations on both the playground and in the hallway, for each classroom.

Study. The team saw little change in the number of behavior write-ups over the course of a month. When asked at a staff meeting, teachers reported that transitions were still an issue.

Act. After observing recess, a pair of team members hypothesized that more structured activity options might help students maintain pro-social behavior. The team asked a staff member who supervises recess if he would be willing to organize and supervise a team sport during each recess period.

PDSA Cycle 2

Plan. The recess supervisor created a schedule of team sports—soccer, flag football, kickball, etc—that students could chose to participate in during recess.

Do. The recess supervisor began organizing and supervising a team sport each recess period.

Study. The team saw a 40% decrease in recess behavior write-ups over the course of the next month, though teachers continued to report that transitions were a challenge.

Act. With behavior incidents reduced significantly, the team decided to address the transition from recess directly, by reorganizing the process by which students re-entered the building.

PDSA Cycle 3

Plan. The principal devised a system by which students lined up by classroom two minutes prior to the end of the recess period, then were allowed into the building one room at a time.

Do. The reorganized end to recess was introduced and practiced with the principal present, then implemented.

Study. The behavior write-ups remained reduced, as before, and teachers reported that transitions were improved. Encouraged by the changes made, several teachers began making a point of being in the halls when students entered the building to supervise and to offer positive support.

Act. The changes implemented were maintained. The principal shared the changes made and improved data with fellow principals at the next district meeting.

Appendix F: PDSA Worksheet

PDSA Worksheet

Plan
- Review goals (connected to EQS) and determine change ideas that will most impact student learning
- Explicate improvement hypothesis, plan how you will test the selected/designed change (with supporting research and evidence), and determine how you will measure impact of the planned changes.

Do
- Test your planned change.
- Collect data, and document progress.

Study
- Analyze data and measure against goals and predictions
- Summarize learning and determine necessary revisions.

Act
- Adapt, adopt, or abandon the change, in response to data and evidence gathered through data analysis/monitoring/reviews.
- Plan for the next cycle (or move to implementation phase, if ready)

Objective/ Aim/ Smart Goal:

Change idea to test:

Plan: Plan the test, including a plan for collecting data.
Questions and predictions:

Who, what, where, when:

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Data Collection Plan	
Question	**Measure(s)** **What data will be collected?**
Process *How well was the change practice implemented?*	e.g., *End of semester math and ELA grades*
Outcome *Did the change practice achieve its aim/positively impact the associated driver?*	e.g., Principal classroom observations using a template that focuses on tracking quality of student-to-student discourse.
Balance *Were there any unintended negative consequences that resulted from implementing the change practice?*	e.g., Coaching logs completed by the 2 coaches for each teacher coached.

Do: Run the test on a small scale. Describe what happened. What data did you collect? What observations did you make? Identify any surprises or barriers.

Study: Analyze the results and compare them to your predictions.

Data Analysis	
Question	**Measure(s)** **What data were collected?**
Process	
Outcome	
Balance	

Summarize and reflect on what you learned:

Act: Based on what you learned from the test, make a plan for your next step.
Describe plans for the next testing cycle. Adopt the change, adapt the change and test again, or abandon:

Text box

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Appendix G: Directions and Criteria for Federal Program Grant Applications

*For all **1003 School Improvement** grant applications:*

Each improvement strategy must be supported with evidence from levels 1-3, as indicated in ESSA. See Evidence Summary for additional details. Please refer to the Evidence-Based Actions for Improvement document to explore and reference evidence-based practices.
- Please reference the research-based sources, from which you have chosen your strategies, using *section 3* on the Supporting Evidence Tool (section 8 is not applicable with these funds)
- Attach responses to the Guiding Questions to your application.
- Attach your Continuous Improvement Plan to your application.
- Attach a service delivery plan for any FTE positions related to coaching or technology integration. Additionally, please attach a sample schedule, resumes, endorsement, job description, and details about the coaching cycle. Please refer to Coaching as Professional Learning: Guidance for Implementing Effective Coaching Systems and visit the AI Hub for additional professional learning materials.

*For all **SIG 1003(g)** grant applications:*

- Each improvement strategy must directly connect to the Vermont Whole School Reform Model and be supported with evidence from levels 1-4.
- Attach responses to the Guiding Questions to your application.
- Please reference the research-based sources, from which you have chosen your strategies, using *section 3* on the Supporting Evidence Tool.
- Attach your Continuous Improvement Plan to your application.
- Attach a service delivery plan for any FTE positions related to coaching or technology integration. Additionally, please attach a sample schedule, resumes, endorsement, job description, and details about the coaching cycle. Please refer to Coaching as Professional Learning: Guidance for Implementing Effective Coaching Systems and visit the AI Hub for additional professional learning materials.

For additional support, please refer to the US Department of Education's Non-Regulatory Guidance: Using Evidence to Strengthen Educational Investments.

Allowable expenses for Title 1 1003 and SIG 1003(g) may include but are not limited to:
- Support of the improvement work at the school level. Funds cannot support district level work.
- Resources directly linked to instruction and the areas that caused the school to be eligible to be a 1003a Comprehensive School or SIG 1003(g) school.
- Resources that build capacity in the effective implementation of the State Standards.
- Resources to scaffold instruction.
  - Funds that provide additional instructional support in areas such as:
  - Personnel, such as instructional coaches, tutors and reading specialists
  - Personnel benefits
  - Instructional materials
  - Professional learning opportunities for staff.
- Purchase of software and/or hardware and the associated professional learning to support how to use the resources for instructional purposes.
- Consultants that target curriculum, teaching methods, and resources that improve student achievement *(for 1003 School Improvement funds the purpose must be supported by evidence from levels 1-3 (see links above).*

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Sample Approvable Investments

Title I: To improve student's academic achievement in English Language Arts, app. licensed interventionist to work with students (sm. group, push-in model) not meeting standards in reading fluency and comprehension using evidence-based model of intervention. Costs include salary and benefits.

Title IIA: To provide a clear & specific connection between student ach data and CIPs identified focus areas, Instructional Coach to provide classroom-embedded prof learning on evidence based practices thru research, modeling, co-teaching, and/or peer observation. Framed by Coaching Cycle Model (Knight, 2015). Includes FTE.

All investments must be congruent with CIP goals, change ideas, narratives, and supporting data.