



Continuous Improvement Through Networked Improvement Communities: Root Cause Analysis and Theory of Action Facilitator's Guide

January 2018

This Regional Educational Laboratory Midwest report was developed under Contract ED-IES-17-C-0007 from the U.S. Department of Education, Institute of Education Sciences. The content does not necessarily reflect the views or policies of the Institute of Education Sciences or the U.S. Department of Education, nor does mention of trade names, commercial products, or organizations imply endorsement by the U.S. Government.

This report is available on the Regional Educational Laboratory Midwest website at <https://ies.ed.gov/ncee/edlabs/regions/midwest>.

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Using the Facilitator's Guide

This facilitator's guide contains materials designed to engage participants in the early steps of a continuous improvement process—collectively identifying a specific, actionable problem and its root causes and developing a theory of action focused on the identified problem to guide the continuous improvement efforts.

Agenda Overview

Table 1 provides an overview of the agenda for the root cause analysis and theory of action work session. Timeframes are provided as estimates; however, activities may be shortened or lengthened based on participant familiarity with and understanding of the content. Appendices A and B provide two different sample agendas based on whether a user will complete both the root cause analysis and theory of action in 1 day or 2 days.

Table 1. Agenda Overview

Agenda Item	Timeframe	Activities	Slides	Materials
Welcome and Introductions	15 minutes	Participant Introductions	1–11	Agenda REL Midwest Summary Handout
Continuous Improvement Overview	15 minutes		12–20	Networked Improvement Communities in Action Handout
Root Cause Analysis	60 minutes	Activity 1: Create a focused problem statement	21–28	Pens/Markers Sticky Notes Chart Paper
Break	15 minutes		29	
Root Cause Analysis	90 minutes	Activity 2: Unpack root causes	30–32	Fishbone Diagram Handout
Lunch	45 minutes			
Review Root Cause Analysis	15 minutes		33–35	Completed Fishbone Diagram
Theory of Action	75 minutes	Activity 3: Develop a theory of action	36–46	Theory of Action Handout
Break	15 minutes		47	
Theory of Action	60 minutes	Activity 4: Write a measurable aim statement	49–50	
Next Steps and Adjourn	15 minutes		51–57	

Section 1—Welcome and Introductions

Purpose

This section provides context for the work session, time for participant introductions, and an overview of REL Midwest.

Materials

- Slide Deck: Slides 1–11
- Agenda (Appendix A and Appendix B)
- Handout: REL Midwest Summary (Appendix C)

Annotated Agenda

Table 2. Section 1: Welcome and Introductions

Agenda Item	Description	Slides	Materials
Welcome and Introductions (10 minutes)	<ul style="list-style-type: none"> • Welcome participants to meeting. • Share purpose of the meeting and its connection to larger work/initiatives in which participants may be engaged. • Review agenda for the day. • Facilitate introductions of participants: <ul style="list-style-type: none"> – Name – Title – Organization/School 	1–4	Agenda
About REL Midwest (5 minutes)	<p>Regional Educational Laboratory (REL) Midwest (https://ies.ed.gov/ncee/edlabs/regions/midwest/default.aspx) is part of a network of 10 regional educational laboratories funded by the U.S. Department of Education's Institute of Education Sciences (IES). IES (https://ies.ed.gov) is the statistics, research, and evaluation arm of the U.S. Department of Education.</p> <p>REL Midwest's collaborative research partnerships include the following:</p> <ul style="list-style-type: none"> • Midwest Achievement Gap Research Alliance • Midwest Alliance to Improve Teacher Preparation • Midwest Career Readiness Research Alliance • Midwest Early Childhood Education Research Alliance • Iowa Learning and Technology Networked Improvement Community • Other Collaborations 	5–11	REL Midwest Summary Handout

Section 2—Continuous Improvement Overview

Purpose

This section provides an overview of the methods and goals of engaging in continuous improvement efforts through networked improvement communities (NICs).

Materials

- Slide Deck: Slides 12–20
- Handout: Networked Improvement Communities (NICs) in Action (Appendix D)

Annotated Agenda

Table 3. Section 2: Continuous Improvement Overview

Agenda Item	Description	Slides	Materials
Continuous Improvement Overview (15 minutes)	What is a networked improvement community?	12–14	
	A networked improvement community is a collaborative research partnership that uses the principles of improvement science within a group of organizations to learn from promising practices developed in each context and how they may be adapted to other contexts.		
	The Improvement Process	15	
	NICs ask themselves three questions:		
	1. What are we trying to accomplish?		
	2. How will we know that a change is an improvement?		
	3. What change can we make that will result in improvement?		
	Then use Plan-Do-Study-Act (PDSA) cycles to test and refine practices.		
	Why use a networked improvement community?	16–17	
	What does a networked improvement community do?	18–20	Networked Improvement Communities (NICs) in Action Handout
	• Review five steps outlined in the handout.		
	• Review four stages of PDSA cycles.		

Section 3—Root Cause Analysis

Purpose

This section provides a set of sample activities that a facilitator can use to bring a group to consensus about the definition of a problem and its root causes.

- Activity 1 helps individuals create a focused problem statement and categorizes potential causes.
- Activity 2 uses the fishbone diagram to identify root causes. The primary problem statement becomes the “head” of the fishbone diagram. The focused problem statement comprises the key factors that make up each major bone.

Materials

- Slide Deck: Slides 21–32
- Handout: Fishbone Diagram (Appendix E)
- Pens and Markers
- Sticky Notes
- Chart Paper

Annotated Agenda

Table 4. Section 3: Root Cause Analysis

Agenda Item	Description	Slides	Materials
Activity 1 – Create a Focused Problem Statement (60 minutes)	<p>Goal: Bring the group to a consensus on the specific problem statement.</p> <p>Strategy: Start with small, specific problems, then combine issues to form a general statement.</p> <p>Step 1: Brainstorm problems.</p> <ul style="list-style-type: none"> • Encourage participants to think of one problem that they have experienced in the past week related to integrating technology into instruction. Have them write these down on individual sticky notes. Only give them a few minutes to do so. • Next, encourage participants to think of one to three problems that they have experienced in the past month related to the topic at hand. Do the same for the past year. Each problem should be written on a sticky note—different colored sticky notes will indicate whether problem arose in the past week, month, or year. <p>Step 2: Share and group problems.</p> <ul style="list-style-type: none"> • Solicit a few volunteers to read their problems out loud. 	21–28	Pens/Markers Sticky Notes Chart Paper

Agenda Item	Description	Slides	Materials
	<ul style="list-style-type: none"> Have participants get together in small groups and group all of the problems written on the sticky notes together into general categories (e.g., "Scheduling" or "Lack of knowledge of best strategies"). If participants note that a problem could relate to more than one general category, encourage them to attach each problem to its dominant category (the one that characterizes it most centrally). 		
	<p>Step 3: Write a problem statement.</p> <ul style="list-style-type: none"> Assign a few participants to each general category of problems. Have the participants work together to draft a focused problem statement for each. Encourage the participants to be as specific as possible. <p>Step 4: Build consensus.</p> <ul style="list-style-type: none"> Read the drafted problem statements out loud and ask if there are any revisions. Ask participants whether the drafted statements are specific enough. Make revisions as a group and finalize the statements. Use the individual problem statements to draft one large, focused problem statement as a group. 		
Break (15 minutes)			
Activity 2 – Unpack Root Causes (90 minutes)	<p>Goal: Determine the root causes of the problem(s) defined in Activity 1.</p> <p>Strategy: Assign groups of participants to each subproblem developed in Activity 1 and have them work through the fishbone diagram.</p> <p>Step 1: Work in small groups on subproblems.</p> <ul style="list-style-type: none"> Have participants write out the problem statement at the head. Each "bone" should be one of the subproblems identified in Activity 1. Ask participants whether other subproblems or causes should be listed. There should be only four or five. These subproblems now should be thought of as causes. If they are not, keep the sticky notes in a "parking lot"; perhaps these are root causes more than primary causes or perhaps they illustrate a root cause. Divide participants into groups. Each group should have one cause, depending on the size of the group. Each group should get a copy of the fishbone diagram. Encourage participants to use the sticky notes they grouped in Activity 1 to think about the causes. They should ask, "Why does this happen?" for each cause as they fill out the fishbone diagram until they get to a root cause. A good rule of thumb is five "why" questions, but that's not a hard-and-fast rule. Each group should focus only on the causes of their particular subproblem. Remind participants to focus on causes and not solutions. <p>Step 2: Present the root causes.</p> <ul style="list-style-type: none"> Have each group present its root causes to the larger group. Ask the larger group if it has anything to add. Make revisions as needed. As participants read out their fishbone diagram, add to the larger fishbone diagram that is projected on the wall so participants can see 	30–32	Fishbone Diagram Handout

Agenda Item	Description	Slides	Materials
	how they are building the whole diagram together. Another option is to have groups that finish early do this while they are waiting for others.		
Lunch (45 minutes)			

Section 4—Theory of Action

Purpose

This section provides a set of sample activities that a facilitator can use to engage the group in developing a theory of action focused on the identified problem of practice and write a measurable aim statement to guide the work of the NIC.

- Activity 3 guides participants in the development of a theory of action.
- Activity 4 engages participants in identifying specific and measurable goals grounded in the theory of action.

Materials

- Slide Deck: Slides 33–50
- Completed Fishbone Diagram
- Handout: Theory of Action (Appendix F)
- Chart Paper
- Markers

Annotated Agenda

Table 5. Section 4: Theory of Action

Agenda Item	Description	Slides	Materials
Review Root Cause Analysis (5 minutes)	Root Cause Analysis <ul style="list-style-type: none"> • Review problem statement developed in Activity 1. • Review the fishbone diagram developed in Activity 2. Ask participants for final comments, reflections, or questions about the diagram before moving on to Activity 3. 	33–35	Completed Fishbone Diagram
Activity 3 – Develop Theory of Action (75 minutes)	<p>Goal: Develop a working theory of action that can be used to guide the work of the NIC for the remainder of the year that specifies inputs, outputs, and outcomes.</p> <p>Strategy: Develop a logic model using the Knowlton and Phillips (2012) framework, which works from outcomes to outputs to inputs.</p> <p>An important step in the continuous improvement process is developing a working theory of practice improvement. Although you cannot address each of the root problems that emerged from the root cause analysis, you can identify “a small but powerful set of drivers or key levers for improvement” (Bryk, Gomez, Grunow, & LeMahieu., 2015).</p>	36–46	Theory of Action Handout

Agenda Item	Description	Slides	Materials
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Developing a theory of action involves the following:

- Identifying the outcomes that one or more strategies are intended to generate.
- Describing the series of outputs (or changes) that should show progress toward impact.
- Naming all of the activities needed to generate the outcomes (for each strategy).
- Defining the inputs that link directly to the activities.

Step 1. Focus on Outcomes

- Work as whole group to answer the following questions.
 - Who are the program targets? Who will implement the changes suggested? Who will the changes ultimately affect?
 - What is the desired change?
 - What is the action that will achieve the stated goal?
 - What is the timeline for completion?

Who is the target?	What is the desired change (action verb)?	In what (outcome)?	By when?
<i>For example, teachers</i>	<i>For example, increase</i>	<i>For example, formative data use skills</i>	<i>For example, March 2016</i>

- Are the program targets, hypotheses, desired outcomes, and timeline SMART?
 - Specific?
 - Measurable?
 - Action oriented?
 - Realistic?
 - Timed?
- After the group has come to a consensus, fill in the outcomes and targets in the theory of action template.

Agenda Item	Description	Slides	Materials
	<p>Step 2: Relate Activities to Outputs</p> <ul style="list-style-type: none"> Use the change ideas to develop a series of If/Then statements that begin to connect activities to outputs. The statements will be captured on-screen for participants to see. For example: <ul style="list-style-type: none"> IF we develop a series of college readiness workshops for parents, THEN we can recruit parents to participate in the workshops. IF we invite parents to participate in the workshops, THEN parents attend the workshops. IF parents attend workshops, THEN parents better understand the timelines and demands of the college application process. IF parents better understand the timelines and demands of the college application process, THEN parents help their students with the application process. IF parents help their students with the application process, THEN students meet financial aid and college application deadlines. Make sure the If/Then statements connect directly to the outcomes specified in Step 1 and are short and actionable. Using these If/Then statements, fill in the theory of action template with activities and outputs that relate to the outcomes specified in Step 1. <p>Step 3: Focus on Inputs</p> <ul style="list-style-type: none"> As a group, discuss what inputs are required in order for the activities to take place. The group should consider the following questions: <ul style="list-style-type: none"> What resources are readily available? What additional resources or supports are needed? Is access to these resources or inputs realistic? The facilitator will enter the discussed inputs into the theory of action template on-screen. <p>Step 4: Review the Theory of Action</p> <p>As a large group, discuss whether the theory of action that the group has developed:</p> <ul style="list-style-type: none"> Addresses the primary drivers and measurable aim specified in Activity 1 Includes activities that are feasible for the NIC to implement Includes program outputs and outcomes that are measurable 		
Break (15 minutes)		47	

Agenda Item	Description	Slides	Materials
Activity 4 – Write Measurable Aim Statement (60 minutes)	<p>Step 1: Identify a Measurable Improvement Aim (30 minutes)</p> <ul style="list-style-type: none">As a group, review the problem statement, the fishbone diagram outlining root causes, and the theory of action developed in Activity 3.In small groups, write out measurable aim statements. The aim statements should include:<ul style="list-style-type: none">A preset target populationA metric of interestA change in a numerical value on the metric of interestA timeline on which the change should occur <p>For example: To increase from 5% to 50% the number of students who achieve college math credit within 1 year of continuous enrollment.</p> <ul style="list-style-type: none">Present your aim(s) to the larger group. Discuss the pros and cons of each. Come to a consensus on the aim statement the group would like to use to drive its work. <p>Step 2: Anticipate Unintended Consequences</p> <ul style="list-style-type: none">As a group, ensure that the theory of action supports the measurable aim statement. Make changes as needed.Discuss challenges that may result at the classroom, school, district, intermediate school district, and state levels. Keep track of these on chart paper, with potential solutions or buffers against these challenges in the right-hand column.	48–50	Chart Paper Markers
Classroom-Level Challenges			
Challenge		Potential Solution(s)	
School-Level Challenges			
Challenge		Potential Solution(s)	
District-Level Challenges			
Challenge		Potential Solution(s)	
Education Service Agency-Level Challenges			
Challenge		Potential Solution(s)	
State-Level Challenges			
Challenge		Potential Solution(s)	

Section 5—Next Steps and Adjourn

Purpose

This section provides a preview of the next activities in the continuous improvement process and shares additional resources related to the topics covered in this module.

Materials

- Slide Deck: Slides 51–57

Annotated Agenda

Table 6. Section 5: Next Steps and Adjourn

Agenda Item	Description	Slides	Materials
Next Steps (15 minutes)	<p>Debrief Session and Share Additional Resources</p> <ul style="list-style-type: none"> • Ask participants to share reflections from the conversations during the activities. <p>Preview Next Session</p> <ul style="list-style-type: none"> • Using the theory of action and measurable aims developed in this session, the NIC will next turn its attention to defining outcome measures and developing formative metrics to ensure it can achieve the goals specified during today's session. • In anticipation of the next meeting, consider the following questions: <ul style="list-style-type: none"> – What metrics do you already collect that can be used to track inputs, outputs, and outcomes in the theory of action? – What metrics would you like to use to track inputs, outputs, and outcomes in the theory of action? <p>Share IES Resources</p> <ul style="list-style-type: none"> • Share links to IES resources that provide additional information regarding NICs and logic models. <p>Provide Contact Information</p> <ul style="list-style-type: none"> • Add contact information to final slide. 	51–57	

References

- Bryk, A. S., Gomez, L. M., Grunow, A., & LeMahieu, P. G. (2015). *Learning to improve: How America's schools can get better at getting better*. Cambridge, MA: Harvard Education Press.
- Knowlton, L. W., & Phillips, C. C. (2012). *The logic model guidebook: Better strategies for great results* (2nd ed.). Thousand Oaks, CA: SAGE.
- Proger, A. R., Bhatt, M. P., Cirks, V., & Gurke, D. (2017). *Establishing and sustaining networked improvement communities: Lessons from Michigan and Minnesota* (REL 2017–264). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Midwest. Retrieved from https://ies.ed.gov/ncee/edlabs/regions/midwest/pdf/REL_2017264.pdf

Appendix A. Sample Agenda (One-Day Meeting)

Agenda

Time	Session
9:00–9:15 a.m.	Welcome and Introductions
9:15–9:30 a.m.	Overview of Networked Improvement Community and Root Cause Analysis
9:30–10:30 a.m.	Activity 1 – Create Focused Problem Statement
10:30–10:45 a.m.	Break
10:45 a.m.–12:15 p.m.	Activity 2 – Conduct Root Cause Analysis
12:15–1:00 p.m.	Lunch
1:00–1:15 p.m.	Review Root Cause Analysis
1:15–2:30 p.m.	Activity 3 – Develop a Theory of Action
2:30–2:45 p.m.	Break
2:45–3:45 p.m.	Activity 4 – Write Measurable Aim Statements
3:45–4:00 p.m.	Next Steps and Adjourn

Appendix B. Sample Agenda (Multiple Sessions)

Day 1: Root Cause Analysis Meeting

Agenda

Time	Session
9:00–9:15 a.m.	Welcome and Introductions
9:15–9:30 a.m.	Overview of Networked Improvement Community and Root Cause Analysis
9:30–10:30 a.m.	Activity 1 – Create Focused Problem Statement
10:30–10:45 a.m.	Break
10:45 a.m.–12:15 p.m.	Activity 2 – Conduct Root Cause Analysis
12:15–12:30 p.m.	Next Steps and Adjourn

Day 2: Theory of Action Meeting

Agenda

Time	Session
9:00–9:10 a.m.	Welcome and Introductions
9:10–9:15 a.m.	Review of Root Cause Analysis Meeting
9:15–10:30 a.m.	Activity 1 – Develop a Theory of Action
10:30–10:45 a.m.	Break
10:45–11:45 a.m.	Activity 2 – Write Measurable Aim Statements
11:45 a.m.–12:00 p.m.	Next Steps and Adjourn

Appendix C. REL Midwest Summary



REL Midwest Conducts Its Work Through Collaborative Research Partnerships With Stakeholders

Regional Educational Laboratory (REL) Midwest is part of a network of 10 regional educational laboratories funded by the U.S. Department of Education's Institute of Education Sciences (IES). The RELs work in partnership with school districts, state education agencies, and others to conduct applied research that seeks to solve practical problems and advances fundamental understandings of education challenges and processes. The RELs also share up-to-date research evidence and engage with researchers, practitioners, and policymakers in understanding that evidence. In addition, the RELs provide technical assistance related to the application and use of data and scientifically valid research.

REL Midwest conducts its work through collaborative research partnerships with stakeholders in **Illinois, Indiana, Iowa, Michigan, Minnesota, Ohio, and Wisconsin**. To address the priorities and interests of these states, REL Midwest supports four research alliances and a networked improvement community (NIC), as well as emergent partnerships. The work of these partnerships is developed in consultation with state education agency (SEA) and district staff to address priority education issues in the region.








Although the four research alliances and the NIC have a main state partner, SEA staff working on similar issues in the region have the opportunity to participate in a community of practice to share best practices and explore research findings. The emergent partnerships operate over a shorter period of time and have the objective to respond to SEA and local education agency requests for immediate assistance.



REL Midwest's collaborative research partnerships include the following:

- **Midwest Achievement Gap Research Alliance:** This alliance will support efforts in Wisconsin to close the Black-White achievement gap. The alliance will support the development of initiatives to improve cultural competency, track implementation of those initiatives, and develop metrics to track expected changes such as cultural assumptions, beliefs, behaviors, and instructional strategies.
- **Midwest Alliance to Improve Teacher Preparation:** This alliance will explore teacher preparation models, examine relationships between existing models and teacher and student outcomes, and examine the implementation of changes in Michigan Department of Education policy.
- **Midwest Career Readiness Research Alliance:** This alliance will investigate the career readiness and pathways of high school students in three high-poverty rural districts in Minnesota with a high percentage of Native American students.
- **Midwest Early Childhood Education Research Alliance:** This alliance will examine the characteristics of early childhood education programming and participation in Illinois and the relationship between programming and school readiness at kindergarten entry and student outcomes in early grades.
- **Iowa Learning and Technology Networked Improvement Community (NIC):** This NIC will bring together rural districts in Iowa to engage in continuous improvement research activities to identify effective ways of integrating technology into instructional practice.
- **Emergent Research Partnerships:** Emergent partnerships also will be developed with the objective of responding to state and local education agency requests for immediate assistance.

REL Midwest offers the following types of supports to the collaborative research partnerships and stakeholders in the Midwest region.

	Applied research studies that address partnerships' research questions		Technical support such as survey, interview or observation protocol development, literature reviews, or tool development
	Events that support the dissemination and understanding of existing research		Reviews of studies and interventions to determine level of evidence to support ESSA implementation
	Workshops that support the use of data and research		Ask-A-REL annotated bibliographies produced in response to stakeholder questions
	Coaching that supports the use of data and research		

 If you would like to discuss a state-specific issue with a REL Midwest staff member, contact REL Midwest Director Julie Kochanek jkochanek@air.org or REL Midwest Deputy Director Chad Duhon cduhon@air.org.

 To find out more about REL Midwest, visit <https://ies.ed.gov/ncee/edlabs/regions/midwest/index.asp>.

This work was prepared for the Institute of Education Sciences (IES) under Contract ED-IES-17-C-0007 by Regional Educational Laboratory Midwest, administered by American Institutes for Research. The content of this poster does not necessarily reflect the views or policies of IES or the U.S. Department of Education, nor does mention of trade names, commercial products, or organizations imply endorsement by the U.S. Government.

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Appendix D. Networked Improvement Communities in Action

Improvement Communities in Action



Michigan Focus Networked Improvement Community

- 1 Form an Improvement Community**—In Michigan, Regional Educational Laboratory (REL) Midwest researchers were strategic about recruiting networked improvement community (NIC) participants and devoted time and resources to the onboarding process. Researchers worked with partners at the Michigan Department of Education to identify potential participants at the intermediate school district (ISD) level, ISD partners identified participants at the district level, and so on. Researchers had in-depth conversations with all potential participants to explain the goals and structure of the NIC to create commonalities in language and expectation.
- 2 Identify a Problem**—Members of the Michigan Focus NIC determined that a recurring issue was as follows: *Focus Schools suffer from a lack of data use to implement, monitor, and evaluate continuous improvement on a daily basis because of time, priority, skills, resources, and commitment.* This initial problem statement was refined through a root-cause analysis that included using continuous improvement tools such as fishbone and driver diagrams. NIC participants identified mathematics, specifically students' lack of mathematics fluency skills, as a primary driver of inequality in Focus Schools. Participants identified students' lack of opportunity to practice mathematics fluency skills as a problem that the group would work on together.
- 3 Conduct Continuous Plan-Do-Study-Act (PDSA) Cycles**—The Michigan NIC then refined the problem statement using the findings uncovered from the root-cause analysis and problem identification step (Step 2) to the following: *Students lack the opportunity to practice mathematics fluency skills on a daily basis, which results in gaps in mathematics fluency skills and exacerbates achievement gaps in mathematics on standardized assessments.* With this new problem statement, the NIC began working through PDSA cycles, with the defined goal that *all students will master grade-level fluency benchmarks by demonstrating appropriate strategies and recalling facts.*
- 4 Debrief**—The improvement community meets on a monthly basis to review implementation and data. After the first PDSA cycle, participants will discuss the strengths and weaknesses of the intervention and outcome measures in PDSA Cycle 1 and amend accordingly for Cycle 2, and so on.
- 5 Share Products and Processes**—The next step will be to share the products and processes from the Michigan Focus NIC with colleagues within the state and other states and regions to encourage implementation of a similar process and garner best practices from Michigan's experience.



Improvement Communities in Action

Step 1: Form an Improvement Community

Identify individuals across diverse contexts whose work directly addresses a shared problem of practice. Be intentional about the roles and governance levels that should be represented in the network.

In finalizing the improvement network:

- Foster a commitment to sharing expertise, data, and resources across contexts.
- Create a safe space for sharing successes and challenges.
- Ensure that the network is oriented toward continual improvement rather than finite intervention.

Step 2: Identify a Problem

Use this stage to identify a broad problem that may be addressed through a networked improvement community (NIC), such as “low student achievement in mathematics” or “low achievement in a specific subgroup of students.” Think about current initiatives. Consider how an NIC might propel these efforts. Introduce the NIC as a way to support the work rather than add to it. Consider conducting a root-cause analysis.

Questions to consider:

- What problem of practice should be addressed?
- How do you know this is a problem?
- What local evidence suggests change is needed in this area?

Step 3: Conduct Continuous Plan-Do-Study-Act (PDSA) Cycles

Being in an NIC is about more than sharing experiences and expertise. Participants should work together to:

- a. **Identify a Specific Problem of Practice**—This process allows participants in the network to select one problem of practice to work on together and identify the primary drivers of the problem of practice. One tool that can be used is the root-cause analysis.
 - b. **Select or Develop Practical Measures**—These measures will help the NIC track progress across the improvement cycle. These measures should not be burdensome to collect and should provide meaningful information about a primary driver.
 - c. **Test Practice(s)**—Use research or other local evidence to identify a practice or set of practices that can be implemented relatively quickly and without overburdening the network members. Implement the intervention with the problem of practice in mind while ensuring data are collected on metrics that can be used to track progress (or lack thereof).
 - d. **Reflect and Refine**—Continue to refine the program, develop an intervention, and track measures in iterative cycles. Make sure there is sufficient time for reflection and debriefing with team members. Use data collected on the practical measures of interest to determine what changes should be made.
- Note:** Steps 3a–3d are an iterative “subcycle” of phases within the larger cycle.

Step 4: Debrief

Discuss observations on the tested practice(s) with the NIC. If the tested practices do not lead to the intended improvements, determine whether to redefine the problem, the measures, or the practices.

Step 5: Share Products and Processes

Use regular meetings with the network to form a community that can share knowledge about tested practices, provide a forum to work together on problems of practice, and develop and share key messages about the process of continuous improvement.

Questions to consider:

- What made the involvement of individuals in this improvement network valuable?
- How can that value be replicated?
- Share the work of the community with others in your context to continue to broaden the scope and relevance of work and to build the foundation for scaling up.

Contact Information

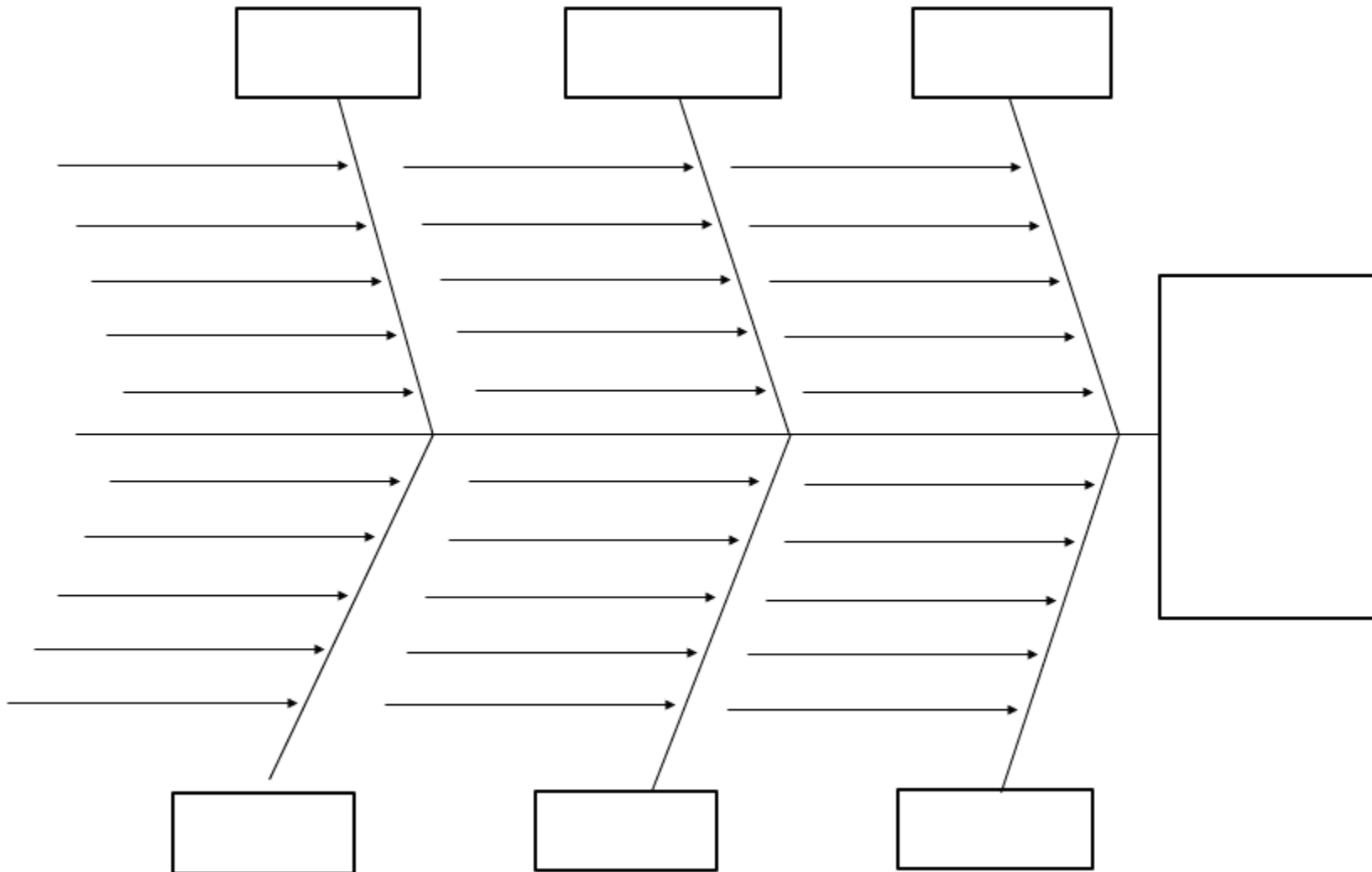
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44030_02/16

This work was funded by the U.S. Department of Education's Institute of Education Sciences (IES) under contract ED-IES-12-C-0004, with REL Midwest, administered by American Institutes for Research. The content of the infographic does not necessarily reflect the views or policies of IES or the U.S. Department of Education, nor does mention of trade names, commercial products, or organizations imply endorsement by the U.S. government.

Appendix E. Fishbone Diagram



Appendix F. Theory of Action

[illegible]

Program Targets: Describe who will be served by the program and how these individuals will be recruited.

Program Goal: List the measurable aim(s) developed here.



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