What Skills Must Improvers Develop to Use and LEAD Improvement Science?
Presenters: Marian A. Robinson and Gary Collette, GWU

Conceptual Model for 3 Skill Dimensions: Technical, Soft, and Learning Skills

Origins: The Carnegie Foundation recognized the value of, "Analogical Scavenging" in Improvement Science.

- In <u>business</u>, social psychologist **Robert L. Katz** recognized three areas of managerial skills and determination, for which level they are characterized.[i]
- In <u>manufacturing</u>, the **IPMA Competence Baseline**, (ICB), offers an international standard of project management skills, i.e. of project manager and project team.[ii]
- In <u>healthcare</u>, the authors of the **Health Foundation's** *Skilled for Improvement* recognize that applying the techniques of improvement science alone is insufficient to deliver sustained quality improvements. Any team – no matter its starting point – must invest in simultaneously developing three sets of skills: *'technical', 'soft'* and *'learning' skills*. Developing these skills must be a central part of participants' roles – not just a marginal 'add on'.

Strong and sustained institutional support is necessary to create an environment conducive to improvement. Improvement work should not underestimate the influence of key individuals who can either drive projects forward or hold them back. Differences or low engagement within partnerships working with various stakeholders can determine the success of improvement interventions.[iii]

Key Questions:

- **What is <u>your level of skill</u> development in these three key areas?**
- **How do you know <u>if team members possess</u> these skills?**
- **How can you <u>recruit people</u> who possess these skills?**
- **How may you scale up the skills of new members? (e.g., as the NIC expands from core team to front line/classroom teachers)**
- **How may you account for changes in teams over time (e.g., turnover, institutional knowledge, etc.)**
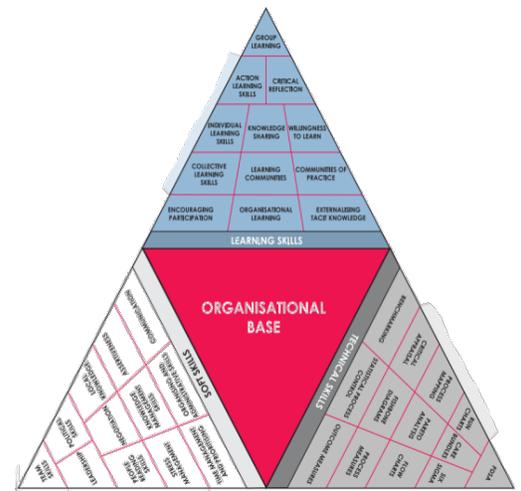
The 3 Dimensions Supporting Your Skill Development in Improvement Science

(1). TECHNICAL Skills for Improvement: Participants in Improvement Science Networks must have the capacity to use, or at least learn to use, **technical** skills. These skills may be described as the general 'toolkit' of Improvement Science, offering a body of tools, dispositions, and concepts that participants need to understand, appreciate, and engage in Improvement Science in an authentic and productive way. [iv]

These skills may include: efficient data collection, crafting Run Charts and Pareto Charts, conducting Root Cause and Causal Systems Analyses, composing Driver and Cause and Effect Diagrams, Flowcharts, Process Maps, and PDSA cycles.

- Self-assess your Growing Technical Skills (see handout)

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(2). HUMAN Skills for Improvement: The term 'soft' may have 'touchy-feely' connotation that may be misleading. Leadership, structures and political wrangling is essential to achieving genuine and lasting improvements. Nevertheless, on balance, the term 'soft' is preferential to 'organizational' or 'interpersonal', as theses critical skills are broader than these terms suggest. Key to Improvement Science is understanding how different personalities communicate. Understanding how the group, organization, and stakeholders hear, speak, and interact are essential for the process of improvement.

These skills may include: The *soft skills* needed for Improvement Science in Education develop as interplay between individuals, groups, and organizations. Categories include: Individual Personality dynamics, Leadership, Assertiveness, Stress management, Group/Team Skills, Communication skills, Political Skills, People reading skills, Negotiation, Organizational, Administrative skills, Knowledge Management, Local knowledge, Time management/Prioritizing.

- Self-Assess your Growing Soft/Human Skills (see handout)

(3). LEARNING Skills for Improvement: Learning about improvement approaches relies on the willingness and capacity for learning within communities. A growing body of work suggests that for technical and soft skills to be used successfully in practice in a given context, they need to be developed in a complex cycle of collective, individual, practical, and theoretical learning. Such a cycle must involve people who individually internalize new knowledge that consists of practical, contextual, and/or tacit knowledge. This type of learning has been found to involve members in collectively sharing and reflecting on their experiences. This exchange may emerge through story swapping and observation, for example. Such learning opportunities among improvers may involve challenging underlying assumptions and learning how to formalize—in their own contexts—new practices that they may genuinely embrace.

These skills may include: Individual Learning, Willingness to Learn, Action Learning, Critical Reflection, Collective Learning Skills, Communities of Practice, Organizational Learning, Encouraging Participation, Externalizing Tacit Knowledge, and Knowledge Sharing, are all aspects teams need to develop.

- Self-assess your Growing Learning Skills (see handout)

Source: Skilled for Improvement: Learning Communities and the Skills Needed to Improve Care: An Evaluative Serve Development (March 2014) The Health Foundation: London, England.

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TECHNICAL SKILLS
- PDSA
- Six Sigma
- Process Mapping
- Flowcharts
- Driver Diagrams
- Causal Systems Analysis
- Root Cause Analysis
- Data Collection
- Run Chart
- Fishbone Diagram
- Pareto Chart

Identify what, specifically, is the problem you are trying to solve.

See what works - for whom and under what set of conditions

See the system that produces the current outcomes.

Embed measures of key outcomes and processes.

Engage rapid cycles of Plan, Do, Study, Act (PDSA)

Accelerate improvements through networked communities

"SOFT" SKILLS
- Personality Dynamics
- Leadership
- Communication Skills
- People Reading
- Time Management
- Administrative/Prioritizing
- Local Knowledge
- Knowledge Management
- Stress Management
- Assertiveness
- Negotiation
- Political Skills

LEARNING SKILLS
- Willingness to Learn
- Critical Reflection
- Action Learning
- Communities of Practice
- Learning Communities
- Collective Learning Skills
- Encouraging Participation
- Externalizing Tacit Knowledge
- Knowledge Sharing