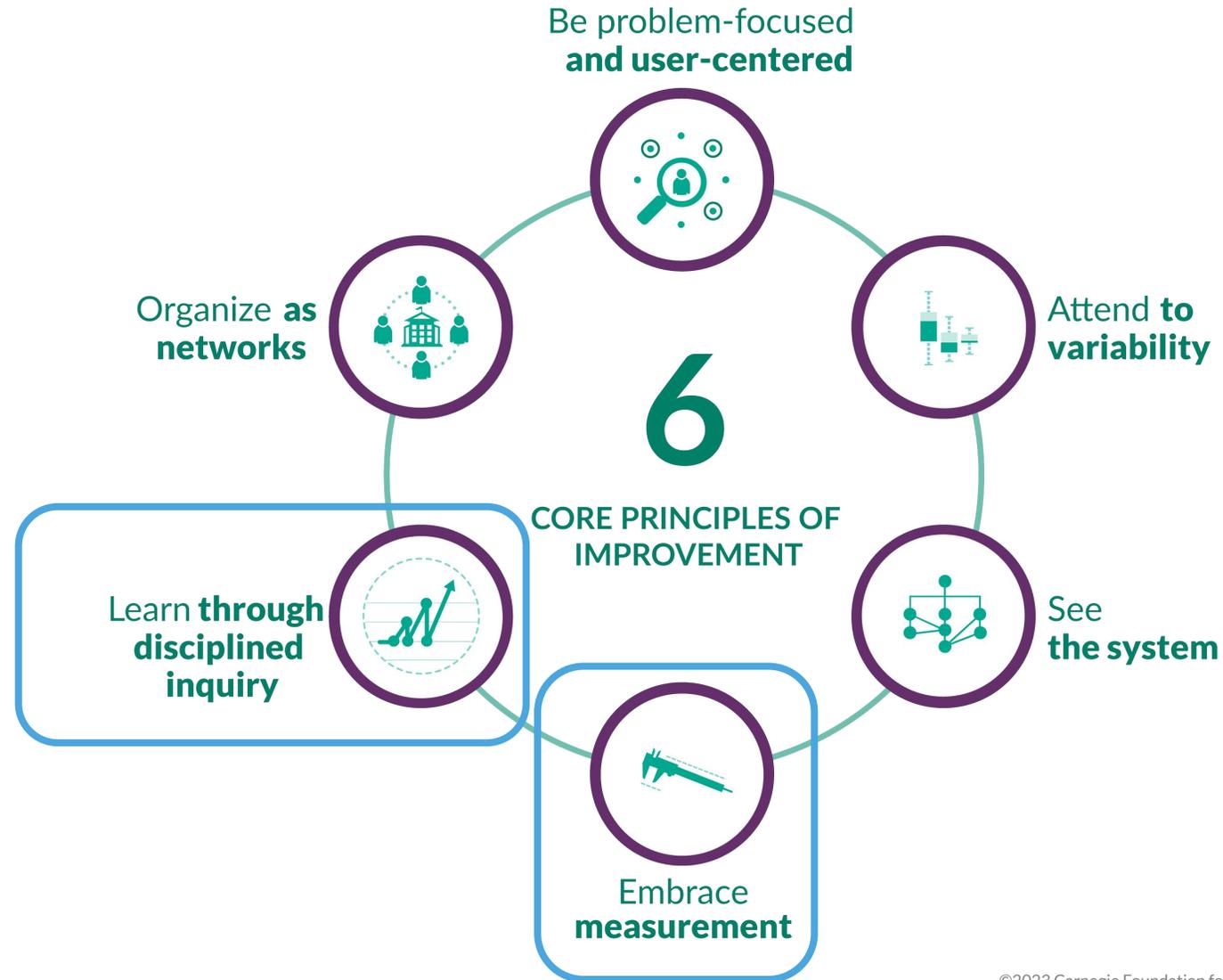


Using Data for Improvement: **Data Infrastructure Activity**



6 Principles of Improvement



Core Concepts

- Collecting, managing, analyzing, and acting on data is a complex process that relies on a **data infrastructure**.
- In improvement work, **momentum** is important. Providing data **rapidly** has huge benefits—it keeps people learning and getting better.
- It's important to think about **how often** data needs to be collected, analyzed, and reported out, and design your infrastructure so that it can meet those requirements.
- In improvement work, people often occupy multiple roles and/or complete many different activities in a data infrastructure.



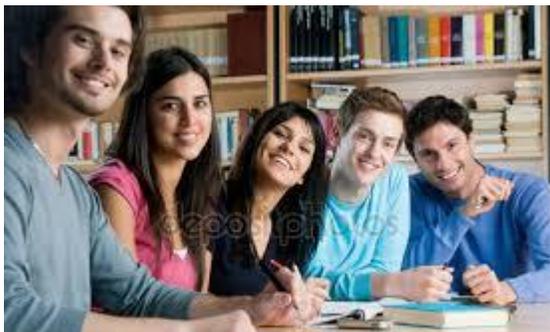
What is Data Infrastructure?

Data infrastructure is made up of the roles, processes, and tools that allow an organization to collect, manage, analyze, and act on data.

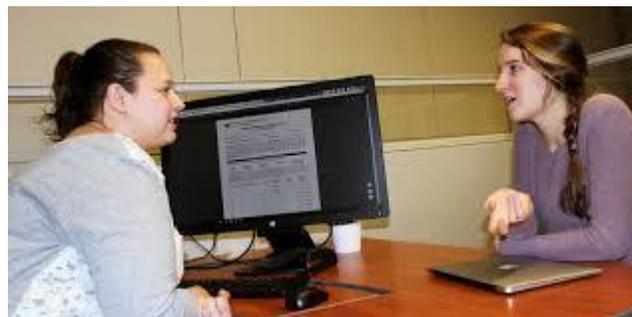
- **Roles**
 - *The people who are part of data infrastructure*
- **Processes**
 - *The activities, procedures, and practices that are part of data infrastructure*
- **Tools**
 - *The paper surveys, recordings, computers, storage devices, and other physical objects that are part of data infrastructure*



Data Infrastructure Roles



Producers of Data



Managers of Data



Consumers of Data



Collectors of Data



Analysts of Data



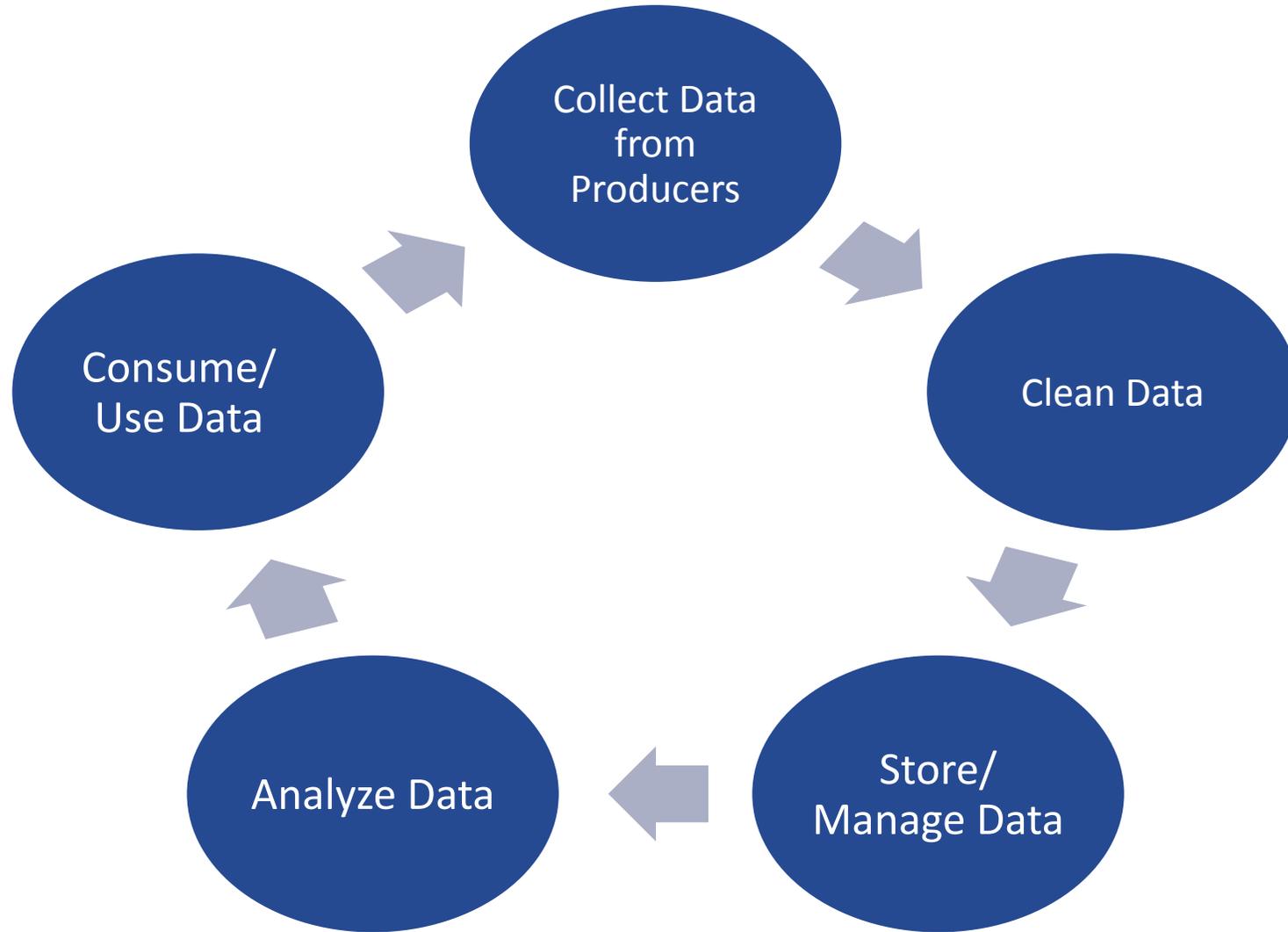
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Data Infrastructure Processes



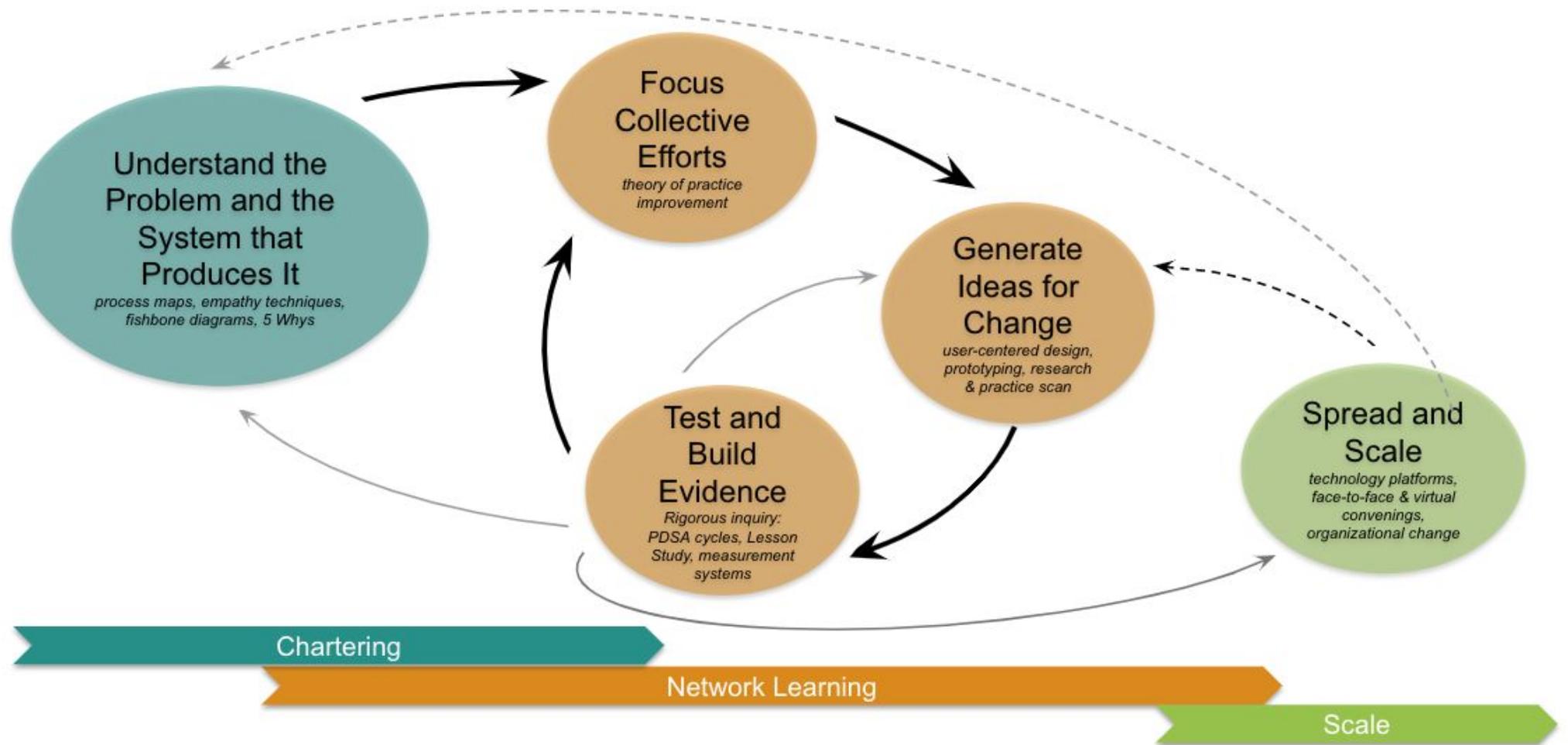
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Data Infrastructure is Needed to Support Networked Improvement



Measurement & Data Infrastructure Simulation Activity



Overview

- You are part of a cross-functional team engaged in an improvement project.
- Your task is to **design a process** that allows you to collect, manage, analyze and act on data.
- You seek to provide teachers with the data they need to learn rapidly from their own practice.



Roles

- Each person will take on a role:
 - Teacher
 - Data Manager
 - Data Analyst
 - Research Partner
 - Facilitator/Scribe



The Aim: Improving Math Proficiency among 6th Grade Students

- **The Problem:** only 1 in 5 students in 6th grade coming from your middle school reach proficiency in Math
- **The Aim:** increase the proficiency rate to 2 in 5 students
- **Lagging Outcome Measure:** number of 6th grade students reaching proficiency in Math as measured by the state assessment
- **Leading Outcome Measures:** MAP Growth (Math)
- **Driver Measures:** growth mindset, sense of belonging, and values



Objective & Outcome

- **Objective:** To construct a process by which a short survey can be completed by students in 6th grade math classes, the data managed and analyzed, and the information reported out to teachers.
- **Outcome:** Create a process map that documents the process of collecting the data, managing it, analyzing it, and reporting it.



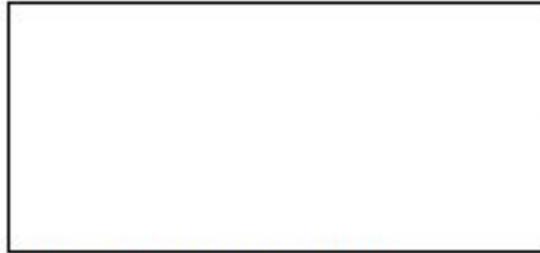
Key Questions

- How can this be done in the least burdensome manner possible?
- Who will be involved in each step? Who will own each process?
- How frequently will data collection occur, and who will be needed in each iteration?
- How much time will each step take?



Sample Process Map

Step 1



Description of the Step

Who owns this step?

Who else needs to be involved?

How long will it take?

Step 2



Step 3



Activity Sequence

- Read the directions in your role card (5 minutes).
- Introduce yourselves according to your role and talk about what you know. (5 minutes)
- Work together to design a process, decide who will be involved at each step, and plan out how long it will take. (20 minutes).
- Note:
 - We have not given you complete information. It's ok to make some assumptions.
 - There is not one “correct” answer—there are multiple processes that will work.

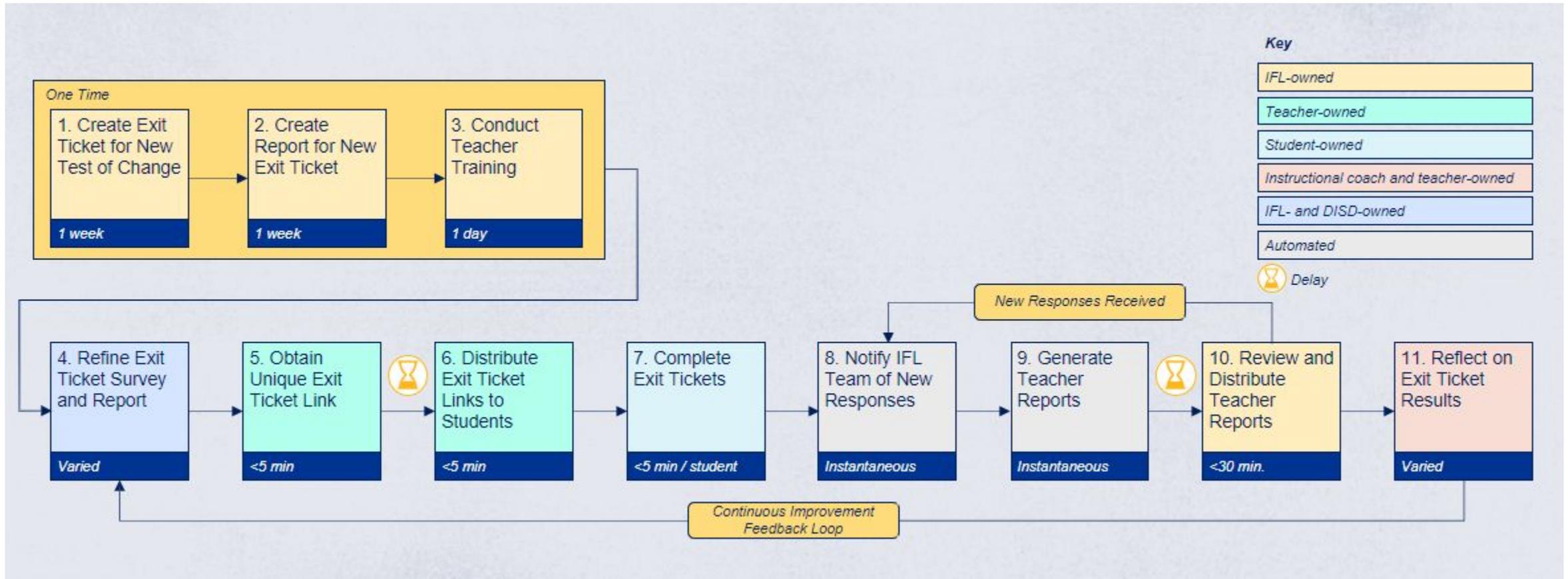


Sharing Out

- What did you learn during the activity?
- What were the hardest and easiest parts of designing your process?
- What other information did you want in order to design an ideal process?



Dallas NSI Exit Ticket Process



Takeaways



Takeaway #1

- Undertaking measurement can be **complex** - it may seem simple on the surface, but it's important to remember that there is a **system** underlying data collection, management, and analysis.



Takeaway #2

- In improvement work, **momentum** is important. Getting people the data they need **rapidly** has huge benefits—it helps them continuously learn from their own work.



Takeaway #3

- It's important to think about **how often** data need to be collected, analyzed, and reported out, and design your infrastructure so that it can meet those requirements.



Takeaway #4

- **Someone** has to complete each process that is part of the data infrastructure – sometimes people have to fulfill multiple roles.

