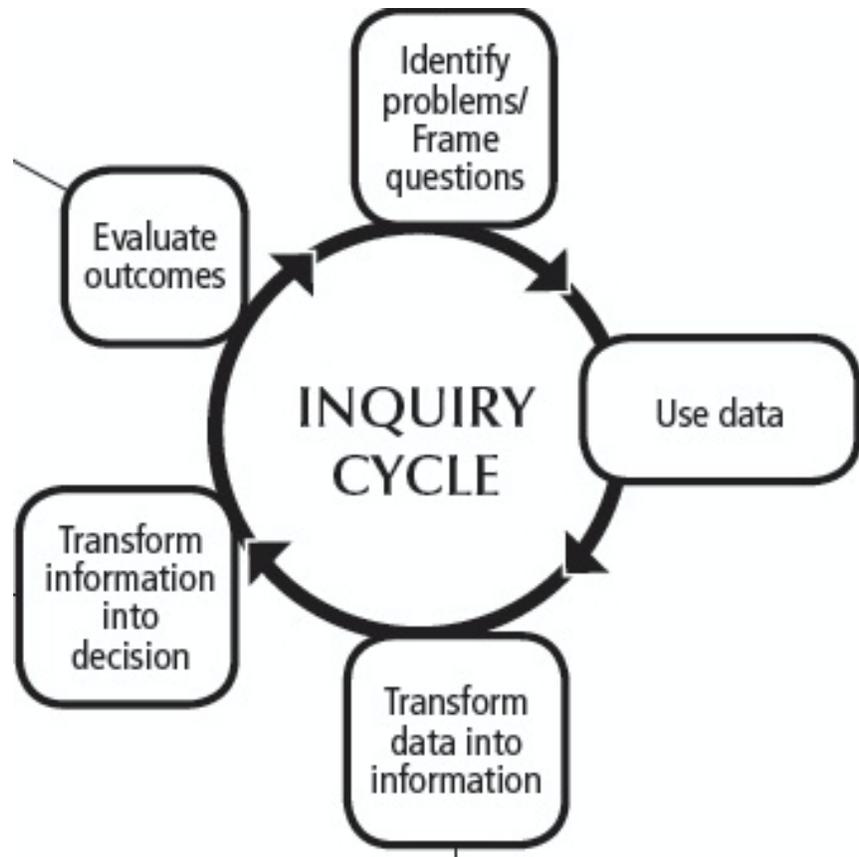


## The Data Literacy for Teachers Inquiry Cycle

WestEd has created a construct called Data Literacy for Teachers (DLFT) that outlines the skills, knowledge, and dispositions teachers need to be able to use data effectively and responsibly. These skills are organized into five components: Identify Problems of Practice/Frame Questions; Use Data; Transform Data into Information; Transform Information into A Decision; and Evaluate Outcomes. These components form an iterative inquiry cycle.



### **DLFT Components**

#### **Identify Problems/Frame Questions**

This component requires the user to identify a problem of practice and frame a research question. This is a difficult skill for teachers to exhibit. Users must identify the issue, begin to lay out why it is a problem, consider the contextual factors that may be influencing the problem, with an eye to what data might be needed to address the issue.

#### **Use Data**

This component is an amalgam of many diverse skills and knowledge that generally fall under the category of using data. Understanding data sources entails understanding the differences between qualitative and quantitative data, knowing how to identify the right data sources for the

problem, understanding data quality and data properties, understanding the purposes of different data sources, understanding the alignment of different data sources to the problem of practice, and knowing how to use multiple sources of data. Another set of skills deals with the access of data, knowing how to locate and retrieve data sources, and the technologies to support data use. A third set of skills focuses on a general understanding of fundamental concepts of statistics and psychometrics (with no intention of creating measurement specialists or statisticians). A fourth subcomponent focuses on how to handle data. This entails knowing how to generate, analyze, prioritize, integrate, examine, manipulate, organize, manage, aggregate, and disaggregate data. It also entails knowing how to drill down into data and knowing the appropriate level of data that pertains to the problem of practice. A final set focuses on the use of assessments. This entails knowing how to develop assessments, select assessments for particular purposes, and knowing the differences across various types of assessments.

### **Transform Data into Information**

Skills here include: fundamental statistics, understanding data displays and representations, how to assess patterns and trends, the summarization and synthesis of data, understanding of and predicting the consequences of decisions, and understanding how to interpret data.

### **Transform Information into Decisions**

This component focuses on: the translation of the data and information into instructional action or some other kind of action: users' ability to determine what to do instructionally, based on the information they have; and users' ability to diagnose the problem and make appropriate instructional adjustments. It also focuses on the differentiation of data use for individual students and groups of students, versus whole class instruction.

### **Evaluate Outcomes**

The final component deals with examining the outcomes of a decision, comparing the changes that have occurred because of the implementation of some course of action, whether instructional or something else. It requires users to compare pre and post results, monitor for student and classroom changes, and reconsider the original issue that was posed. The component is not seen as the end of the inquiry cycle but rather that data-driven decision making is an iterative process. It may require another pass through the inquiry process before a successful outcome has been accomplished.

For additional information about Data Literacy for Teachers, please see:

Mandinach, E. B., & Gummer, E. S. (2016). *Data literacy for educators: Making it count in teacher preparation and practice*. New York, NY: Teachers College Press.

Mandinach, E. B., & Gummer, E. S. (2016). What does it mean for teachers to be data literate: Laying out the skills, knowledge, and dispositions. *Teaching and Teacher Education*, 60, 366-376.