Problem Solving & Data Review - Secondary

Information in this document is designed to support coaches in articulating the problem-solving process and its alignment with school-level data reviews.

Author: Michigan's Integrated Behavior and Learning Support Initiative (MIBLSI)

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What is a Problem?

Stan Deno defined a problem as the difference between what is expected and what is happening (2002). We approach data review from a problem-solving perspective. The work of the data reviews is to develop a specific set of activities in the form of an Implementation Plan that are intended to eliminate this difference between what is expected and what is actually happening with regards to student outcomes.

Problem-Solving Process

The four-step problem-solving process is designed to move a team from the identification of a problem to an actual Implementation Plan that is likely to reduce or eliminate the problem. The four steps of the problem-solving process are: (1) Problem Identification, (2) Problem Analysis, (3) Plan Development, (4) Plan Implementation and Evaluation. The following is a visual representation of this process.
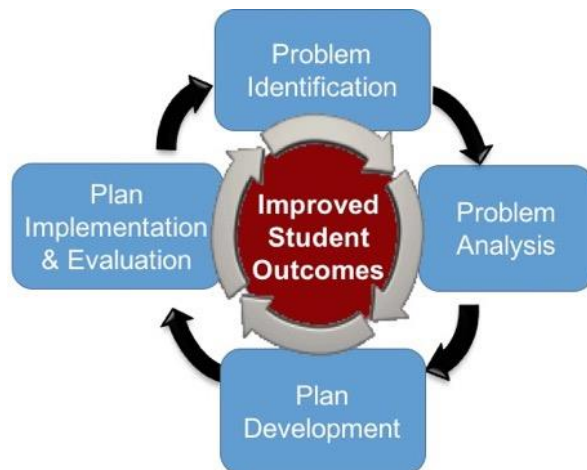
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Problem Identification:

In the problem identification step, teams will review data to define their problem. Recall the problem is the difference between what is expected and what is happening. For secondary school-level data review the focus is on overall engagement outcomes when defining the problem. At the end of this step the team has defined at least one S.M.A.R.T. objective related to the identified problem.

Problem Analysis:

During problem analysis, the team focuses on what factors may be contributing to the current outcomes. These factors are meant to be those within the control of the team. We group these factors in to four categories, Instruction, Curriculum, Environment, and Learner. We spend our time focused on the first three categories because these are the areas we have the most control over. This step ends with the development of a hypothesis statement for each S.M.A.R.T. objective identified during problem identification. The hypothesis statement is typically written in an "if, then" format that will point the team towards what activities they will engage in to reduce or eliminate the identified problem. An example of a hypothesis statement is:

If Cross Department Teams meet every 4-6 weeks to engage in a problem-solving process and to support the use of the common content area reading strategy of Survey, Question, Read, Recite, and Review then our percent of students at low risk will increase to 80%

Plan Development:

During plan development, the teams use the hypothesis statement developed during problem analysis to develop the activities in the Implementation Plan. Each activity should directly link to the hypothesis statement. The Implementation Plan should include specific activities as well as who is responsible for the activities, timelines for completing the activities, resources needed and a spot to record progress along the way.

Plan Implementation & Evaluation

The final step of the problem-solving process is to actually implement the plan and evaluate the impact. This is where having a detailed Implementation Plan will assist not only in the completion of the activities but in monitoring and evaluating the impact of the plan on student outcomes.

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Problem Solving & Michigan's School Improvement Process

The four-step problem-solving process aligns with the four steps of Michigan's Continuous School Improvement Process.

Table 1 Aligning School Improvement Process with Problem-Solving Process

Michigan's Continuous School Improvement Process	Problem-Solving Process
Gather	Problem Identification
Study	Problem Analysis
Plan	Plan Development
Do	Plan Implementation & Evaluation

Problem Solving & MIDATA's Analysis of School-wide Data Report

Within MIDATA, the Analysis of School-wide Data Report is used as a part of the school-level data review along with the school-level dashboard. The six components of the Analysis of School-wide Data Report align with the four-step problem-solving process.

Table 2 Aligning Components of the Analysis of School-wide Data Report with Problem-Solving Process

Components of the Analysis of School-wide Data Report	Problem-Solving Process
1. What is the problem? 2. What is our objective?	Problem Identification
3. What are the contributing factors? 4. Are these factors validated?	Problem Analysis
5. What are we going to do about the problem?	Plan Development
6. Is our plan working?	Plan Implementation & Evaluation

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