



The Problem-Solving Workshop:  
Adapting Process Improvement Tools for  
K-12 Educators

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# Current State

Lean and Six Sigma are used to **save** companies in manufacturing **millions** of dollars and **increase efficiency** across the board.

Process improvement has also been used in **healthcare** and **non-manufacturing** business operations.

One area that has remained largely unaffected is **education**.



# The Opportunity

The structure of schools has changed very little in the past hundred years.

Schools are heavily **process-based**, **hierarchical**, and notoriously **lacking in funds and resources**.

Although Lean and Six Sigma have been applied to education on a case by case basis, **there is no widespread movement or easy path to integrate it.**



# Guiding Assumptions

Schools **lack the resources and funding** to provide for students and educators.

Lean and Six Sigma could be used to help schools **run more efficiently, save time and money, and foster a data-based problem solving atmosphere** in education

How can Lean and Six Sigma be taught to educators in a way that does not encroach upon their current duties and remains applicable to the work they do?

Goal of the study:

Can a workshop series be developed to teach process improvement tools to educators in a **cost-effective, efficient, and scalable** manner?

# The Plan

- **3-Stage Workshop Series**
  - **Stage 1: Basic Instruction**
    - 3 hour session covering background and nine basic tools
  - **Stage 2: Practice the Tools**
    - Educators find problems/opportunities in their schools and practice the tools taught in the workshop with guidance
  - **Stage 3: Final Stages and Reinforcement**
    - Educators come back together to share what they've found, complete the DMAIC cycle, and receive reinforcement on all the topics covered

# Initial Workshop Session

## Content Covered

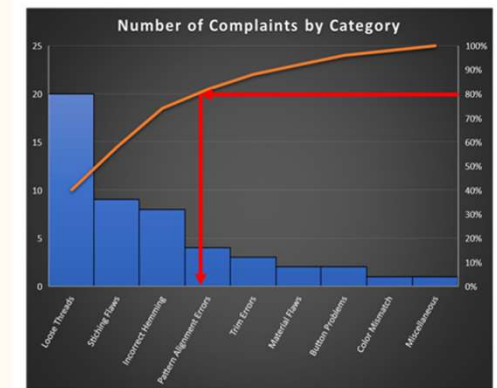
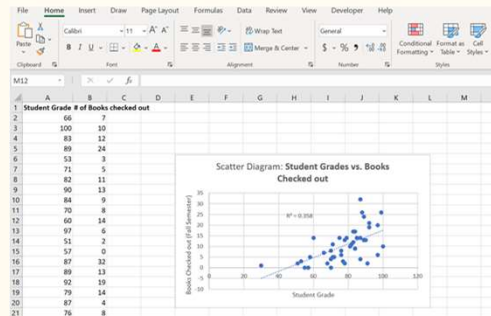
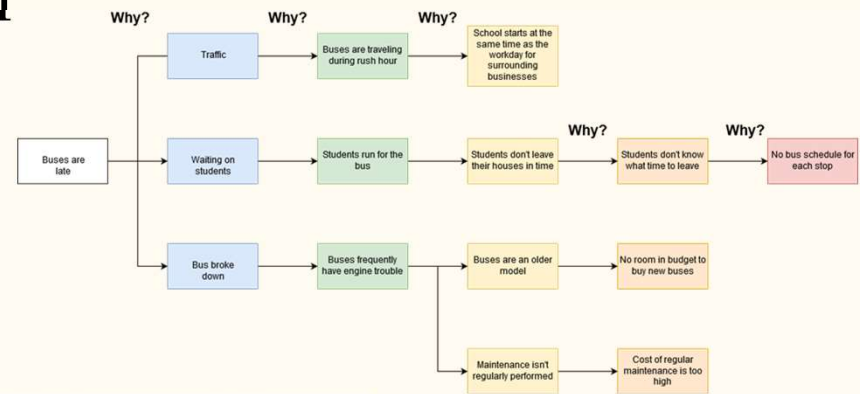
### Overview of Six Sigma

- Overview of Lean
- Teams
- Overview of DMAIC process
- Define Phase

- Brainstorming
- Affinity Diagrams
- Process Flowcharts
- Fishbone Diagram
- Why-why Diagram
- Check Sheets
- Scatter Charts
- Pareto Charts
- Tools in Excel Demo

### Measure Phase

- Check Sheets
- Surveys
- Interviews





# Initial Session

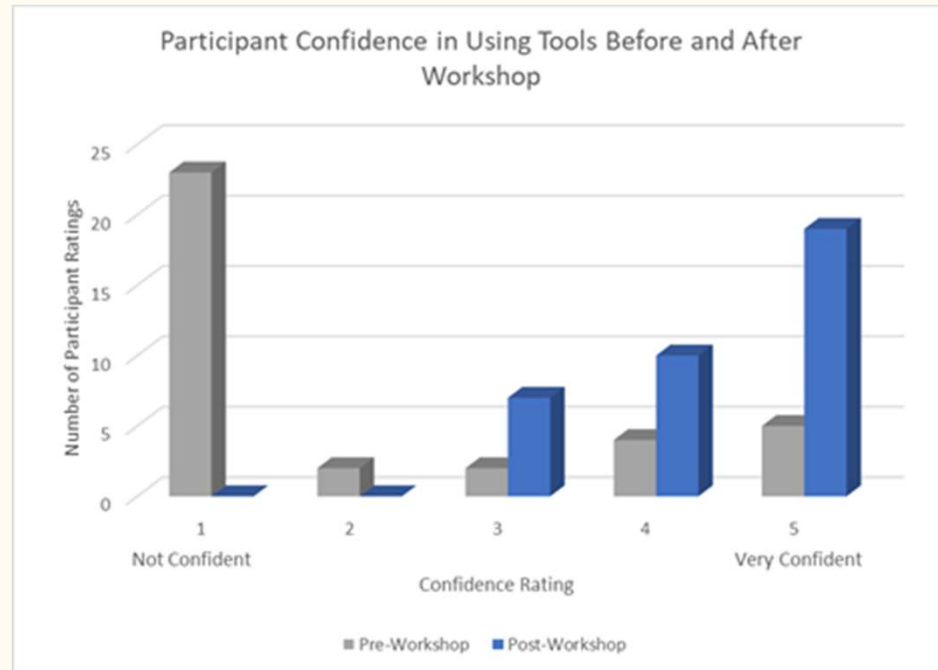


# Effectiveness of Using Workshop to Teach Tools

Can the workshop be effectively used to teach these tools? → Do teachers feel more confident using these tools?

-Lack of time to test proficiency

-Confidence rating used as benchmark



# Qualitative Feedback

This workshop was a great intro to the six sigma/lean concepts and how to possibly apply them in education.

Far exceeded my expectations. This is very beneficial to my work

Very good seminar with tools I can use directly to work on problems.

Average score on helpfulness of workshop was **9.25/10\***

**100%** of participants said they would “highly recommend” the workshop to other teachers and administrators

\*On the 1-10 Helpfulness scale (10=very helpful)

There was a 0% participation rate in the second stage.

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# Reasons for Lack of Engagement

- Manufacturing vs Service-based approach
- Focus on topics that were not primary pain points
- Lack of upper management/administrative support
- Not mandated
- Lack of grassroots support

# Proposed Programs

- **University-Based Workshop Sessions**
  - Collaborations with universities to offer free workshops to teachers
  - Least financial burden for schools
  - Could benefit from “One UT” grant
- **Process Improvement Coach**
  - Takes advantage of current resources
  - Builds grassroots support
- **Process Improvement Professional Led**
  - Expensive, but thorough
  - Best chances of adoption
  - Expert guidance



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# In Summary

- **Education**, and in particular, K-12 education is an area that is relatively new to Lean and Six Sigma methodologies and **shows great potential.**
  - There is a **need for an accessible way** for schools to adopt these methodologies.
  - This study tested **one potential method:** a workshop series.
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# In Summary cont.

- Although the study suffered from a lack of engagement, feedback from the workshop was **positive** and indicated that it was **well-received**.
  - The learnings from this workshop are used to **propose potential programs** to be tested in future studies.
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Questions?  
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