

Process Improvement in Action!

The Barbell Factory

Personnel: 1 person to act as manager, 1 inspector and 8 assembly line workers.

Materials: One large can of Fiddlestix[®], minute timer, 8 bags, chart stand, paper, markers, manila folder with the script for the inspector and a picture of the finished product stapled inside, and another folder with the script for the manager.

Pre-Activity Set-Up: Prepare eight bags of Fiddlestix[®] with assorted parts. Verify that no person has all of the pieces required to meet production specifications (first two bags should not have any green rods or round ends). Arrange 9 chairs in a circle, backs to the center. The Manager is in the center. The Inspector is seated in one of the chairs with a large empty box for any finished products that meet specifications. Workers sit in the chairs in the circle, each with a bag of supplies.

Ask for volunteers from the audience to come forward and accept the factory positions below:

Manager: Person who oversees all aspects of the production. The only dialogue that can be used by this person is:

“Work Harder”

“Work Faster”

“Make Barbells”

“Make More Barbells” (This is the script for the manger’s folder.)

Inspector: Person is in charge of quality control. Co-trainer takes the inspector aside to train. He/She is asked to look discretely at the product specification card and select those barbells that meet the specifications exactly. Clarify that only barbells of this description will meet specifications. Inferior products are rerouted into the system for rework and the inspector is to yell “Rework!” each time that occurs. The inspector must stick to the script and cannot reveal specifications. The Manager doesn’t like rework; it costs money.

Workers: Eight workers perform the tasks that it takes to produce a barbell. As workers take their seats, remind them of the workers job description.

Job Description: To build barbells using assembly line procedures.

Instructions for Workers

“Do you all know what barbells look like?” *Once all workers have confirmed that they are familiar with barbells ask them to take a seat.* **“Place the bag of supplies on your lap, but do not open it. The first person to the inspector’s left will begin the process. He or she will take a part from their supply bag and pass it to the person on his/her left. Each worker in the line may;**

1) Add one part,

2) Delete one part, or

3) Pass the product on down the line

When the product reaches the end of the line, the last workers will had it to the Inspector. The Inspector will decide if the product meets specifications. If not, it will be sent back down the line for rework. The production quota is 3 products in 3 minutes. Remember, we are in the barbell business to make money. The Manager is responsible for ensuring that you work fast and efficiently. No talking or fooling around on the assembly line, just add, delete or pass the product down the line.”

Other participants are process observers. Their role is to watch, listen and be ready to report out at the end of the process.

Round One-System One

Ask someone to time 3 minutes. Begin production of barbells. *(It is highly unlikely that the workers will be able to make 3 products that meet specifications in 3 minutes. Any that do meet specifications should be put into the box beside the Inspector.)*

Round One Debrief

Question the participants and process observers. Co-trainer will record responses on chart paper.

“Workers, how did you feel?”

“Process Observers, What did you see?...hear?”

Have participants draw an analogy of their responses and to that of the system at all levels: classroom, school and district.

Basic Questions: “What were the problems in this process that made it difficult (or impossible to produce 3 barbells in 3 minutes?”

“What could be changed that would enable the group to make the allotted number of barbells in the set time limit?”

Questions that are specific to the concepts of Leadership, Customer Focus, and Process Improvement

Leadership:

What was the role of the manager in the process?

What was the role of the inspector in the process?

Did the manager or the inspector help the workers be more successful in creating barbells?

Whose fault was the failure of the system to produce the quota?

Customer Focus:

Who are the internal customers of the process?

Did the workers understand or know what the other workers were doing in the system?

Process Improvement:

What was wrong with the system?

IMPROVING THE PROCESS

Workers will now be placed in System Two where the previous regulations no longer exist. The production quota is still to produce 3 products (barbells) in 3 minutes, but they can also exceed expectations.

Only instructions:

Workers must be ethical at all times.

Workers must use two minutes to plan before they begin to make 3 barbells in three minutes.

Round Two-System Two

Ask someone to stop timing when the workers have produced 3 barbells. Begin.

Round Two Debrief

“Workers, how did you feel?”

“Process Observers, What did you see?...hear?”

Questions that are specific to the concepts of Leadership, Customer Focus, and Process Improvement

Leadership:

Did the leader’s role change in the new system? How?

Process Improvement:

What changes were made in the process?

What might we do with the extra time we saved with the new system?

What other activities might the workers be involved in?

Key Questions to Debunk Education Myths

“Would offering incentives like merit pay, employee of the month, a \$5.00 per hour raise and other forms of ‘bribery’ have helped the workers successfully make barbells in round one?”

No, the process was the problem. Money or rewards would not fix it.

“If the physical plant were enlarged, could the workers have been more productive?”

No, the process was the problem.

“If the leaders had been kinder/meaner could you have produced more barbells?”

No, the process was the problem. The leader was just working in a dysfunctional system.

“If I had fired all the workers and hired new ones with better attitudes, could they have been productive in round one?”

No, the process was the problem.

“If extra workers had been hired, could you have produced barbells?”

No, the process was the problem; more people would not fix the system.

“If I had extended the work day (school year) in round one, could you have produced barbells to specifications?”

No, the process was the problem.

The Barbell Factory Activity demonstrates the importance of:

- a clearly defined and shared vision
- empowered workers
- the continuous improvement cycle
- looking at the process as the problem and not blaming other issues.

Next two pages

– Instructions for manager folder

- Instructions – picture of barbell

“Work Harder”

“Work Faster”

“Make Barbells”

“Make More
Barbells”



Meets Specifications

Or

Does Not Meet Specifications

Rework