

Design Document

Project and Company: Six Sigma Training from First Up Media

Course Title: 1 – What is Six Sigma?

Start Date: 11-7-25

Requirements

- Timeline: tentative due date – 11-24-25
- Audience: Staff of Small and Medium sized businesses seeking White, Yellow, and Green Lean Six Sigma belts
- Learning Environment: In person or hybrid
- Learning Objectives:
 - Define Six Sigma and Sigma Levels
 - Discuss the benefits of data driven decision making
 - Identify reasons for customer-focused improvement
 - Define the purpose of a value stream
 - Explain the impacts of variation and waste
 - Describe the challenges of implementing Six Sigma

Instructional Principles

- Introduction to tasks and concepts:
 - Introducing businesses that will become a running example throughout the training
 1. Bakery
 2. Online Retail Store
 3. Startup Tech business
 4. Call center for a healthcare agency
 5. Training company
- Activation of previous knowledge:
 - Discuss small business workflows and inefficiencies that are relatable
 1. Provide scenarios for each of the above businesses

- Demonstration of skills to be learned:
 - Questions about each of the scenarios with videos or audio with images
- Application of new skills:
 - Definition matching activity
- Evaluation of learning and finding relevance to role:
 - Ask each trainee how they can use Six Sigma in their role

Format

- Outline of topics and sections:
 - What is Six Sigma?
 - Using Data to Drive Decisions
 - Sigma Levels
 - Principles of Six Sigma
 - Voice of the Customer
 - Continuous Process Improvement
 1. Variation
 2. Waste
 3. Process Control
 - Challenges of Six Sigma
 - Value streams

Assessment

- Summative:
 - Which of the following describes Six Sigma? Select all that apply.
 - 1. Methodology for process improvement**
 - 2. Statistical concept that addresses variation inherent in a process**
 3. Six levels past the standard deviation
 4. Methodology for rapid change across many projects
 - Which of the following is not true about data driven decision making?
 1. Metrics work with skills, knowledge and experience to make decisions
 2. Problems are identified
 3. Solutions are brainstormed

4. Implementation is spontaneous

- Which of the following is a goal of Six Sigma? Select all that apply.
 - 1. Decrease financial risk**
 - 2. Visualize and predict outcomes with accuracy**
 - 3. Build a culture of continuous improvement**
 - 4. Implement many changes to several different factors
- A “perfect” process has what sigma level?
 - 1. 3
 - 2. 4
 - 3. 5
 - 4. 6**
- Principles of Six Sigma integrate which of the following? Select all that apply.
 - 1. Leadership styles**
 - 2. Process management**
 - 3. Improvement endeavors**
 - 4. Using only trial-and-error methods
- Which of the following is not an impact of customer-focused improvement?
 - 1. Profits increase
 - 2. Customer retention increases
 - 3. Loyalty increases
 - 4. Lower sigma level**
- Which of the following are related to value streams? Select all that apply.
 - 1. Includes the sequence of all items, events, and people required to produce a result**
 - 2. Identifies all areas of concern, waste, and improvement**
 - 3. Discusses customer satisfaction and what features the customers value
 - 4. Involves the networking of all stakeholders to decide value
- What does a culture of continuous improvement entail? Select all that apply.
 - 1. Never stop improving**
 - 2. Identify and prioritize areas of opportunity continuously**
 - 3. One area is impacted, then the next**
 - 4. Move closer to the perfect level of accuracy**
- To improve a process, variation should:
 - 1. Decrease**
 - 2. Increase

- 3. Not change
 - 4. Remain steady
 - What is waste?
 - 1. Increasing the costs of a process
 - 2. Items, actions, and people that are unnecessary to the outcome of a process**
 - 3. Increasing required time for a process
 - 4. Increasing the number of errors in a process
 - Which of the following is true about controlling a process?
 - 1. Bring process back to statistical control and remain in control**
 - 2. Address only in control processes
 - 3. Processes that are out of control should be eliminated
 - 4. Processes always stay in control
 - Which of the following is not a challenge of Six Sigma?
 - 1. Lacks support
 - 2. Lacks resources
 - 3. Inconsistent access to valid stats
 - 4. Process improvement and control**
- Formative: Scenario based questions using Chart paper and sticky notes
 - In groups of 4, or as one group (depending on the class size), trainees will visit each station representing one of the business examples listed and will post their responses to prompts at the station. The group will rotate if large enough and time permits. Once person will read the responses at a station and another at the next station until all the stations are reviewed.
 - Prompts: Each of the following businesses are seeking to implement Six Sigma methodology to improve their processes. Read each scenario and determine how the business can be improved with Six Sigma and what might be a challenge for the Six Sigma team.
 - 1. Bakery
 - Scenario:
SweetRise Bakery has started receiving complaints about long wait times during the morning rush. Employees report feeling rushed and say ingredients run out unexpectedly, slowing production. Some pastries are thrown away daily due to inconsistency in size and quality.

Prompts for learners:

- Where do you see waste in this scenario?
- What Voice of the Customer signals are present?
- What parts of the value stream might need mapping?
- What variation might exist in the bakery process?
- What is one Six Sigma challenge this team may face?

Expected learner ideas:

- Waiting time, over-production, rework waste
- VOC: fast service, consistent quality, availability
- Value stream steps: prep → bake → display → sale
- Variation in ingredient measurement & pastry size
- Challenge: employee resistance to standardizing recipes/processes

2. Online Retail Store

Scenario:

GlowGear, an online accessories seller, has increased sales — but customer complaints about incorrect shipments and late deliveries have risen. Customer service calls have doubled. Inventory staff say they “do their best” but the system is confusing.

Prompts:

- Where do you see variation?
- What data would you collect first?
- Where could process control be applied?
- What part of the value stream is breaking down?
- What resistance to change might this business face?

Expected ideas:

- Variation in picking/packing accuracy and shipping time

- Data: error rates, time to fulfill, stock accuracy, return reasons
- Control points: order scan checkpoints, verification
- Break: inventory & fulfillment process steps
- Challenge: staff retraining + system changes

3. Startup Tech business

Scenario:

IdeaSpark, a tech startup, has a small team juggling sales calls, product development, support tickets, and marketing. Employees feel overwhelmed and priorities constantly shift. Projects start but rarely finish. Customers complain about feature delays.

Prompts:

- How does lack of process affect this team?
- Which Six Sigma principle should be emphasized first?
- What is the Voice of the Customer saying?
- Where might you reduce variation in workflow?
- What would be a likely implementation challenge here?

Expected ideas:

- Unclear workflows = rework, missed deadlines
- Start with project prioritization + process mapping
- VOC: consistent updates, reliable releases
- Variation: task switching, inconsistent timelines
- Challenge: “startup culture” → resistance to structure

4. Call center for a healthcare agency

Scenario:

CareLine Health Call Center handles appointment scheduling for a healthcare network. Call wait times have increased, employees feel rushed, callers complain about being transferred multiple times, and data entry errors delay appointments.

Prompts:

- Where is waste occurring?
- Which metrics would support data-driven decisions?
- How could VOC be collected?
- What might be the first step in improvement?
- What barrier might staff face implementing Six Sigma?

Expected ideas:

- Waste: waiting, motion, errors, over-processing (re-entering info)
- Metrics: call times, error rate, transfer frequency, customer ratings
- VOC: surveys, call recordings, feedback logs
- Step: map call flow + streamline transfer rules
- Challenge: training staff + improving call systems

5. Training Company

Scenario:

Bright Training Solutions offers workforce certification programs for local employers and county initiatives. Lately, managers have noticed that while enrollment is strong, completion rates have fallen to 68%, and learner satisfaction surveys average only 3.4 out of 5.

Some instructors submit course updates late, and feedback forms vary by program. The leadership team wants to improve learner outcomes before the next government renewal contract.

Prompts for learners:

- What Voice of the Customer (VOC) signals appear here?
- Where do you see waste or variation in the process?
- Which Six Sigma tool could help identify root causes?
- What data would you collect first?
- What might be a challenge when implementing process improvement in a training organization?

Expected learner ideas:

- VOC: learners want consistent course quality, timely materials, and instructor responsiveness
- Waste: redundant data collection, inconsistent update submissions, rework of surveys
- Variation: instructor delivery methods, different feedback forms
- Tool: cause-and-effect diagram or Pareto analysis of withdrawal reasons
- Data: completion rates by course, survey scores by instructor, time to post materials
- Challenge: balancing instructor autonomy with standardization

Debrief in whole group:

Which business was the hardest to improve, and why?

What does that teach us about real-world Six Sigma challenges?

Materials

- Tools and Media to be used:
 - PowerPoint
 - Laptop
 - Projector, if using a Screen
 - Screen or Monitor
 - HDMI cable, if using a Monitor
 - Paper
 - Chart paper
 - Pens
 - Sticky Notes
 - Moodle to keep PowerPoints and assessments?