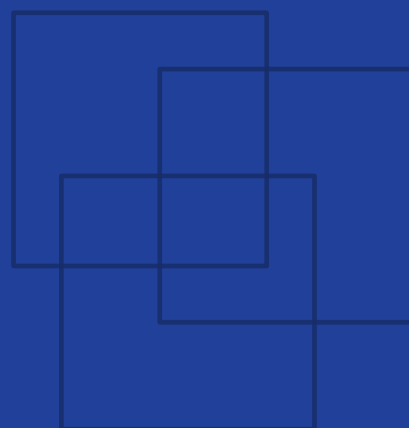




International
Labour
Organization

Improving processes

Production systems



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Table of Contents

About the FIT module	4
Guidelines for successfully using the training tool.....	5
Session 1	
Business case study.....	9
Session 2	
Learning about the topic	15
Session 3	
Action items.....	29

Factory Improvement Toolset

The Factory Improvement Toolset (FIT) is an innovative self-facilitated, activity-based learning approach designed by the International Labour Organization (ILO) to create more decent and sustainable employment. FIT supports manufacturers in global supply chains to improve productivity, competitiveness and working conditions by upgrading production systems and factory practices.

FIT has been developed to be a sustainable, time- and cost-efficient option for supporting factories to enhance productivity through improved business practices and working conditions. FIT focuses on areas of production improvement and actions to be taken specific to each participating factory. It can be utilized as stand-alone learning tools or to complement other training programmes.

With each module lasting no more than 2.5 hours, FIT enables factories to train personnel, whilst minimizing interference with production realities. The easy-to-use methodology makes it possible to rapidly scale the implementation to reach a large cohort of trainees across multiple production facilities.

Working in small groups, participants review real-life situations and engage in discussions to determine improvements to be made in factory without an external trainer or specialist. This self-facilitated, activity-based and highly participatory learning approach positions participants as both student and teacher and makes the toolset self-tailored to the needs and interests of each group.

About this module

This FIT module on Improving processes is a training for garment manufacturers to improve their production systems. Participants will work on identifying needs, implementing changes, tracking results and applying new processes. This module takes about 2 hours to complete.

Upon completion of the training, participants should have:

- Understood how to prepare for a factory improvement cycle.
- Learnt how to identify needs and plan an improvement cycle using an improvement plan.
- Learnt how to implement changes and how to collect and track results.
- Learnt how to make a decision on how to proceed based on results.

The **Factory Improvement Toolset** of the **International Labour Organization (ILO)** are developed and provided by the ILO's **Enterprises Department**.

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Guidelines for successfully using the training tool

Read out-loud

The FIT tool is designed for participants to take turns reading the instructions in the modules out loud to the group. At least one member of the group should be selected in the beginning of the session to take this responsibility.

Work as a group

Always work in groups of 5-7 during a FIT session. The programme will not be successful if participants work independently or do not collaborate with each other.

Be active

Encourage everyone in the group to actively contribute to the discussion. Ensure that no group member dominates the discussion or does not participate at all.

Monitor the time

Select one member of the group to monitor the time for each activity and remind the group when it is time to move to the next exercise.

Complete the action plan

Complete the action plan at the end of the session. This will help ensure that FIT results in improvements in the factory. Review the plan a while after the session to make sure that actions in the plan has been completed accordingly.

Icons

A set of icons is used throughout the modules to provide easy to recognize reference points for different tasks within each session and activity.



Read out loud

One member of the group should read out loud to the rest of group.



Knowledge link

Knowledge and skills are linked to other FIT learning resources and support.



Time allotted

Indicates how much time each sessions and activity should take.



Supplies needed

Indicates that supplies may be necessary to complete the session.



Begin step-by-step instructions

Indicates that the step-by-step instructions for an activity are beginning.



Think about it

Indicates additional information for the participants to think about.

Measuring your performance

Measuring operational efficiency is a key aspect of running a productive factory. The box(es) below guides you in understanding which measurement indicator(s) can be used to measure and evaluate the performance of your factory in relation to the topic of this FIT module.

Indicator 1	Capacity utilization (%)
Definition	How much of your capacity (what you could produce) was used after completing an order (what you did produce). It needs to be calculated for each order, after the order is completed. E.g.: If capacity is 20%, it means that you only produced 20% of the total quantity you could have produced in the same amount of time. So, efficiency is very low.
Purpose	To understand how efficiently the factory (production) runs, and whether it could become more efficient.
Calculation	$(\# \text{ Earned minutes} / \# \text{ Available minutes}) \times 100\%$ Notes: Earned minutes = SMV x # pieces sewn Available minutes = (# of operators in the line(s) x # days it took to complete the order x # hours in a working day x 60)
Frequency	Calculate for each order, then calculate the average every month.
Responsible	Sewing room manager

Indicator 2	Pieces per employee
Definition	The amount of accepted pieces that each employee contributed to producing over a certain period of time. The higher, the more productive your employees are.
Purpose	To understand how productive your employees are, set a personal productivity target, identify ways to increase productivity in your factory, then track improvements by comparing with previous results.
Calculation	$(\text{Total \# of pieces produced} / \text{total \# employees in the factory})$ Note: Total # of employees includes ALL employees in the factory, including managers, administration, etc. – not only workers.
Frequency	Calculate monthly.
Responsible	Production manager



Session 1

Business case study

Goals

Preparing you for the type of discussions you will have with other group members throughout the learning module and understanding the benefits of being exposed to different perspectives.

Understanding better why improving processes is important in the factory.

Session 1

Overview



One member should read the full session out loud to the rest of group



15 minutes



Learning manual, pens, markers and poster paper

A business case study presents a real-life situation for learners to reflect on and discuss with other group members. By discussing the case, students learn from others' ideas and perspectives, and develop an understanding of the topic at hand within the workplace.



One group member reads the case study out loud



The whole group discusses the case study



Everyone develops a deeper understanding of the topic

Activities

Activity

1a



15 minutes

Case study review and respond

The case study below presents a situation that could happen in real life.



Instructions:

- 1) As a group, listen to one member read the case study below while following along in your learning module.

Ali is a new production manager at the HS factory. There are a lot of quality issues at the factory. Together with Tik, the Quality Manager, problems are identified, and actions are taken to eliminate them quickly. Ali thinks that many of these problems could be prevented by improving processes related to quality, such as inspection processes, rather than solving issues in different departments separately. No one has taken this approach before, as managers are too busy fixing different quality problems at the same time. This takes a lot of time, and costs money. It also prevents them from working together to solve factory problems.

Ali suggests setting up a system to improve inspection processes in the factory. After discussing with Tik, workers and managers, they prepare an improvement plan, listing actions to take to improve inspection processes in each department. Then, changes are implemented, and results compared with the previous situation to see whether there was any improvement. Staff are also invited to give feedback on the changes. Results are good, so the changes are adopted by management. New processes become standard.

Since these changes, the factory records less quality issues. This means that factory staff spend less time and money fixing different problems. Factory management can now focus on other issues.

- 2) Together, discuss Ali's situation by answering the three questions in table 1 on the next page.

Table 1. Questions about Ali's situation

1. What problems has Ali identified? What impact do these problems have on the factory and its workers?

2. What do Ali and Tik do or change in order to solve these problems?

3. What are the results of their solutions for the factory and its workers?

This page has been intentionally left blank and can be used for note taking.



Session 2

Learning about the topic

Goals

Understanding improvement cycles and how to prepare for an improvement cycle by setting up improvement teams.

Learning how to identify needs, select appropriate solutions to improve processes, and prepare a process improvement plan.

Discussing good practices for implementing changes, and different ways to track improvement results.

Learning how to use implementation results to make a decision on whether to adopt or reject the new process.

Session 2

Overview



One member should read the full session out loud to the rest of group



90 minutes



Learning manual, pens, and markers

This training module helps you improve your production systems by focusing on process improvement. Processes are systems that you rely on to run the factory and production operations. To improve productivity, you should work on improving processes. This helps avoid bottlenecks, and shows staff that you are committed to factory improvement. Throughout this module, you will work on the five steps below.



First, you will learn more about improvement cycles. Then, you will go through each step of the cycle by learning how to identify your needs, implement selected changes, collect and track results, then make a final decision on the process.

What you will learn today is part of the **PDCA** method, a common, globally-recognized method to improve processes in businesses. PDCA means:

- **Plan:** Plan the improvements that you want to make based on your needs.
- **Do:** Implement the actions outlined in the improvement plan.
- **Check:** Track and evaluate the results of your actions.
- **Act:** Learn from the results and improve your process based on them.

Activities

Activity

2a



10 minutes

Understanding improvement cycles

Before starting an **improvement cycle**, it is important to make sure that you understand what to do. In this activity, you will learn more about improvement cycles.



Instructions:

- 1) Have a participant read aloud each example in table 2. For each example, discuss and decide which improvement stage it describes (Plan, Do, Check or Act). Solutions are at the bottom of the page.

Table 2. Understanding PDCA

Example	P / D / C / A
Implementing the actions agreed on in the improvement plan.	
Thinking of what you need to improve and why, setting an improvement target, and deciding how you will go about improving the process and who will be responsible.	
Summarizing actions taken and results, then deciding whether they are satisfactory. If yes, adopt and standardize the new process. If no, start a new improvement cycle.	
Collecting information on what is changing to react to any problem that comes up, evaluate the results of the improvement actions and understand the obstacles faced during implementation.	

Solutions: Do, Plan, Act, Check.

Activity

2b



10 minutes

PLAN: Selecting your team

To perform an improvement cycle, it is important to set up a **team** of key actors that can work together through each stage. In this activity, you will learn how to set up an improvement team.



Instructions:

- 1) Have a participant read aloud the text box below. Then, read the example in table 3 and make sure everyone understands.
- 2) Together, discuss the three questions in table 3 to practice setting up an improvement team.



Your team should have a leader, and be made up of managers, supervisors and workers, and both men and women. This helps ensure that improvements are efficient and sustainable.

Table 3. Improvement teams

Example: Factory A wants to improve its material issuing process in the storerooms. The factory sets up an improvement team made up of:

- The storeroom manager.
- Experienced clerks from the stores, cutting room and sewing room.
- Quality inspector in the stores.
- Two experienced storeroom workers.

1. Your factory wants to improve the way counter samples are made and approved. Who could you involve in the improvement team?

2. Your factory wants to improve its production scheduling (making a time and action calendar). Who could you involve in the improvement team?

Activity

2c



25 minutes

PLAN: Identifying needs

In the **PLAN stage**, you go through several steps to identify your improvement needs, set an improvement target and select actions to improve the process. In this activity, you will learn how to plan improvements.



Instructions:

- 1) Have a participant read aloud the text box below. Then, discuss and answer the two questions in table 4.
- 2) Have a participant read aloud the scenario in table 5. Then, look at the four criteria for selecting solutions. For each solution, decide whether it matches each criteria (✓) or not (✗). Then, count the amount of (✓) and write down the total in the table.
- 3) Together, write down the two best solutions (those with the most ✓) in the action plan in table 6. Then, fill in the other columns to decide:
 - By when each action should be completed.
 - Who should be responsible for implementing the action.



To plan process improvements, you must go through 3 steps:

- Identify your improvement needs and set an improvement target.
- Consider the current process and identify solutions.
- Select solutions and set responsibilities and timelines.

Table 4. Identifying solutions

1. In your factory, which process do you think should be improved in priority and why?
Example: Marker planning; Recruitment.

2. Together, think of actions you could take to improve this process, and list them below.

Table 5. Selecting solutions

Scenario: Production manager Ali has realized that many quality issues happen because raw materials are defective. He sets up an improvement team to improve the materials inspection process in the stores. The team comes up with six ideas:

1. Select new raw materials suppliers.
2. Purchase two new fabric inspection machines.
3. Hire more quality inspectors to inspect incoming raw materials.
4. Inspect a higher percentage of incoming raw materials.
5. Set precise criteria to decide whether materials should be accepted or rejected.
6. Record all defects found during inspection.

Criteria	1	2	3	4	5	6
This idea will effectively improve the process.	✗					
This idea will not have a negative impact on staff.	✓					
This idea will continue to be effective in the long term.	✗					
This idea will not cost much in time, money or resources.	✓					
Total	2					



If you are still unsure which solutions to select:

- Try out your idea in a small way and see how they work.
- Talk to someone (another factory) that solved a similar problem.

Table 6. Action Plan – Process improvement

Table 6. Action Plan – Process improvement				
Problem identified	Incoming materials are of low quality and have a high defect rate.			
Solutions identified	Action(s) to be taken	Person responsible	By when?	How will improvements be measured?
Improving the material inspection process to lower defect rates and improve quality.	Example: Purchase two new fabric inspection machines.	General Manager, in coordination with the Quality Manager	20 March	Defect Per Hundred Units (DHU) Before: DHU = 30% Target: DHU = 10% Monthly progress report Final evaluation in 6 months

Activity

2d



10 minutes

DO: Implementing actions

In the **DO stage**, you implement the actions listed in your improvement plan. This is a “test phase”, to test whether your solutions effectively improve the process when applied. In this activity, you will discuss good practices for implementing changes.



Instructions:

- 1) Together, go through the list of good implementation practices in table 7, and put a ✓ on the right if you usually do this when implementing changes in your factory.

Table 7. Implementing changes

Good practices	✓
1. Explain to staff (managers, supervisors and workers) why changes are being made and what the positive effects will be for them and the factory.	
2. Make sure that staff understand that no one will lose their job, have their pay cut or suffer any other negative consequences.	
3. Give staff a chance to provide suggestions before, during and after changes are made.	
4. Give clear instructions to staff involved and provide training if necessary for them to adapt to the changes.	
5. Encourage workers by praising progress and pay close attention to what is happening to show that change is important.	
6. Ask workers to report any problems that they encounter due to changes, so that actions can be taken if necessary.	
7. Organize improvement team meetings regularly to discuss implementation and any problems encountered.	
8. Put someone in charge of recording results (both good or bad) and documenting problems encountered so that it can be discussed by the team.	
9. Prepare regular progress reports which can be shared with senior management and used to evaluate results later on.	

Activity

2e



20 minutes

CHECK: Tracking results

In the **CHECK stage**, you analyse the results to see whether your solutions improved the process. In this activity, you will learn about different methods to track results.



Instructions:

- 1) Together, look at table 8 showing three methods for tracking results. Then, discuss: Do you usually use any of these methods?
- 2) Have a participant read aloud the scenario in table 9. Then, together, answer the four questions in the table, and compare with the solutions are at the bottom of the page.
- 3) Have a participant read aloud the text box below table 9.

Table 8. Three methods

Measurement: Measurement means using indicators (numbers) which help you understand the results of your changes at a certain point in time. Example of indicators: Turnover rate, Defects per Hundred Units, Sample turnaround time, etc.



Hear-say: Listening to what your staff has to say about the changes and their results. It could be through formal reporting, or casual conversations. It is important to listen to managers, supervisors and workers, as they may all have different perspectives or notice different problems.



Go-see: Walking around and observing what has changed (for better or for worse) after implementing the changes. This is especially useful for more visible processes, such as materials storing.



Having a good measurement system in your factory helps you track and improve productivity and processes in a timely manner. To learn more, ask for the “Measuring productivity” module!

Table 9. Tracking results

Scenario: Production manager Ali has set up an improvement team to improve the materials inspection process in the stores. To track the results of their solutions, the team selects an important indicator, Defect per Hundred Units (DHU%). The team leader will also talk to staff involved to better understand the results. There will be a final evaluation, to see whether the solutions worked.

1. How often do you think this indicator (DHU) should be measured?

- a) Only before the actions are implemented.
- b) Only after the actions are implemented.
- c) Before, during and after the actions are implemented.

2. When do you think the final evaluation should take place and why ?

- a) After 6 to 10 months.
- b) After 1 month.
- c) After 2 years.

3. Who should the team leader talk / listen to, to understand the results of the changes?

- a) The improvement team members.
- b) The stores manager, the quality manager and stores inspection checkers.
- c) The stores manager only.

4. Before improving the process, DHU is at 30%. The team set the improvement target at DHU = 10%. After 6 months, results show that DHU = 20%. Which sentence below best describes the situation ?

- a) The process has improved, but not as much as planned.
- b) The process has improved.
- c) The process has improved even more than planned.



Results should be tracked before, during and after your changes:

- **Before:** To understand your current situation / performance.
- **During:** To evaluate progress and solve problems.
- **After:** To evaluate whether the situation improved and whether your improvement target was achieved.

To help you track results, the ILO has developed several resources, such as the Indicators Guide, and the “Measuring productivity” module. To learn more, talk to your FIT coordinator!

Solutions: 1)(c); 2)(a); 3)(b); 4)(a)

Activity

2f



15 minutes

ACT: Improve processes

In the **ACT stage**, you summarize results, make a decision on whether to adopt the changes, then take steps to document, standardize and communicate the new process. In this activity, you will discuss what decisions to make based on the results of your implemented changes.



Instructions:

- 1) Together, look at table 10 showing three actions you can take after tracking the results of your changes, and make sure everyone understands.
- 2) Have a participant read aloud the scenario in table 11, then answer the three questions in the table. Solutions are at the bottom of the page.

Table 10. Three decisions



Adopt: Results are good. Changes helped improve the process, and the improvement target was achieved (or closely achieved). The changes can be adopted, and the new process is documented and standardized.



Adapt: Changes somewhat helped improved the process, so the improvement target was not totally achieved. The solutions should be modified then implemented (Do) and results tracked (Check) before they can be adopted.



Abandon: Results are not good, or even worse than before. Changes did not improve the process, and the target was not achieved. You have to start the improvement cycle again and select new solutions, or change the way they were implemented.

Table 11. Making a decision

Scenario: Ali's improvement team has evaluated results, and must now make a decision on whether to adopt, adapt or abandon the changes, based on the final evaluation results. The improvement target was DHU = 10%. Before the changes, the DHU was 30%.

1. Final evaluation shows that DHU = 20%. Which decision should Andi take?

- a) Adopt
- b) Adapt
- c) Abandon

2. Final evaluation shows that DHU = 40%. Which decision should they take?

- a) Adopt
- b) Adapt
- c) Abandon

3. Final evaluation shows that DHU = 12%. Which decision should they take?

- a) Adopt
- b) Adapt
- c) Abandon



Have you heard the saying “Prevention is better than cure”? You should always prioritize improving processes before problems happen. To learn more, ask for the “Eliminating bottlenecks” module!

Solutions: 1(b); 2(c); 3(a).

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Session 3

Action items

Goals

Summarizing and revising the new knowledge gained.

Identifying concrete applications of the new knowledge that benefit your factory.

Session 3

Overview



One member should read the full session out loud to the rest of group



20 minutes



Learning manual, pens, and markers

Throughout this module, you gained new knowledge on how to improve processes in your factory by using improvement cycles.



In this session, you will think of ways to apply your new knowledge to improve processes in your factory by reviewing best practices and drafting your own action plan.



An action plan template is available online for you to print out and use in your own factory. To obtain it, contact your factory's FIT coordinator!

Activities

Activity

3a



5 minutes

Best practices checklist

In this activity, you will review best practices for improving processes as a next step for evaluating your own and implementing improvements.



Instructions:

- 1) Together, look at the list of best practices in table 12, and put a ✓ in the column on the right if you use these practices in your factory.

Table 12. Improving processes

Best practices	✓
1. The factory selects an improvement team to support the improvement cycle.	
2. The factory identifies which critical processes need to be improved in priority, then prepares an improvement plan with rankings.	
3. The factory decides in advance how to collect and track results to determine how efficient changes are.	
4. The factory makes a decision on whether to adopt, adapt or abandon changes objectively based on results obtained.	
5. The factory involves concerned staff at all levels to plan and implement changes, track results, then apply and communicate new processes.	
6. When the factory adopts the new changes, the new process is documented, standardized and communicated.	

Activity

3b



15 minutes

Your action plan

In this activity, you will think of ways to apply your new knowledge to improve processes in your factory by drafting your own action plan.



Instructions:

- 1) Together, fill in the action plan (table 13) on the next page. Identify a key problem that you want to solve and write down the solutions you identified while working on this module.



The **Factory Improvement Toolset (FIT)** comprises a wide range of modules that can help guide your improvement cycles in your areas of need. To learn more, ask for the FIT Tools Catalogue!

Table 13. Improving processes – Action Plan

Problem identified				
Solutions identified	Action(s) to be taken	Person responsible	By when?	How will improvements be measured?

Improving processes

The Factory Improvement Toolset (FIT) is an innovative self-facilitated, activity-based learning approach designed by the International Labour Organization (ILO) to create more decent and sustainable employment. FIT supports manufacturers in global supply chains to improve productivity, competitiveness and working conditions by upgrading production systems and factory practices.

FIT is being piloted in Asia under the regional Decent Work in the Garment Sector Supply Chains in Asia project funded by the Government of Sweden.

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