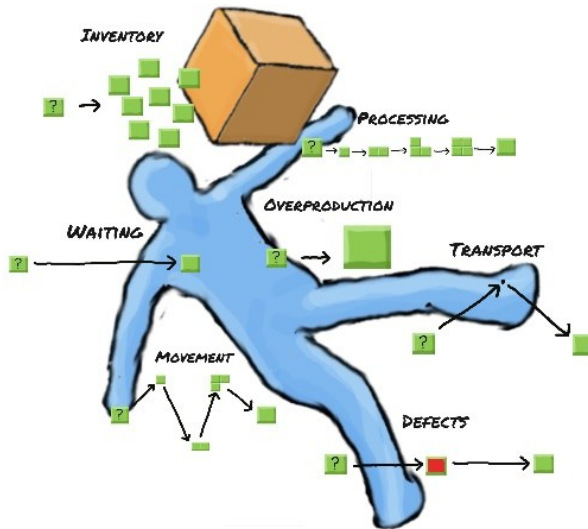


The Lean (but not mean) Learning Machine



How often have we undertaken training as a corporate tick box exercise? Perhaps sometimes months before it is needed or actually ever used at all? Have the curricula seemed bloated with patchy relevance to the job at hand? Drawing from the Agile Manifesto for product development, Paul Lister applies the ideas to establish the principles for improving the effectiveness of training by "Training Lean".

Introduction

An important part of any Safety protocol is training. This is often undertaken at an onboarding stage for an employee but is this the best thing to do? Over the years I have been involved in training in both the role of teacher and student and have found that it can often be treated as a tick box exercise.

So how can Agility help to make it more effective?

A significant part of the formulation of the Agile Manifesto [1] and its twelve principles comes from Lean Thinking [2] and we are going to use some of the ideas from this methodology to examine training, in particular utilising the seven Lean Wastes.

Wasting away

Let's look at these wastes and see what they can teach us about training.

Over Production

I've listed this one first because it is probably the biggest 'training crime' perpetuated by organisations. Overproduction does what it says on the tin, making something before it is needed. In training terms this often means that people are taught to do something that they either don't need or will not need for a considerable amount of time. I experienced this in my early career as a software developer on a large piece of financial software. I was learning about every single part of the system which took months. When I joined a team I ended up working on the same part of the system for three years. Lean is a 'pull' system i.e. you do the work that is needed now and then pull the next piece of work that is needed when you finish. Training should be the same. Understand what people need to be trained in now and then train them again later if needs be.

Overproduction often happens due to 'checklist' thinking, training departments being able to say that employees have all learned everything. But learning only comes with reinforcement. If the knowledge isn't used then it will eventually be forgotten.

"Lean is a 'pull' system i.e. you do the work that is needed now and then pull the next piece of work that is needed when you finish. Training should be the same."

Waiting

Sometimes training is scheduled for months ahead of time for individuals, especially when they are new. This is normally due to the training being undertaken by a different department or the dates of an external course being the first available. But pragmatism tends to ignore this and some sort of 'on the job' training will take place so the employee can be effective in terms of the organisation's needs. Often by the time they participate in a course they already know the bulk of the knowledge and skills that are required, making the course redundant or at the very least economically wasteful.

Over Processing

In normal production this would be adding features or technically finessing things that do not really satisfy the customer. In training terms this means adding knowledge to core training that is not needed. Lean is very much about prioritising what is needed first. A student learning CPR for instance does need to understand the mechanics of how to revive a person. They do not need a history of how the method was developed or a detailed explanation of the anatomy of the respiratory system.

Inventory

This is like overproduction but tends to reflect more on the trainers rather than the trainees. Often courses will be built which are based more on the expertise of the trainers and what they know rather than the need of the student. These courses build up as inventory but are seldom used. Similarly, the existing course will not often be audited and hence contain incorrect or redundant information that will not come to light until said information is utilised. Training should be designed for need not assumption of need. The lean waste '**Defects**' can fall into this category.

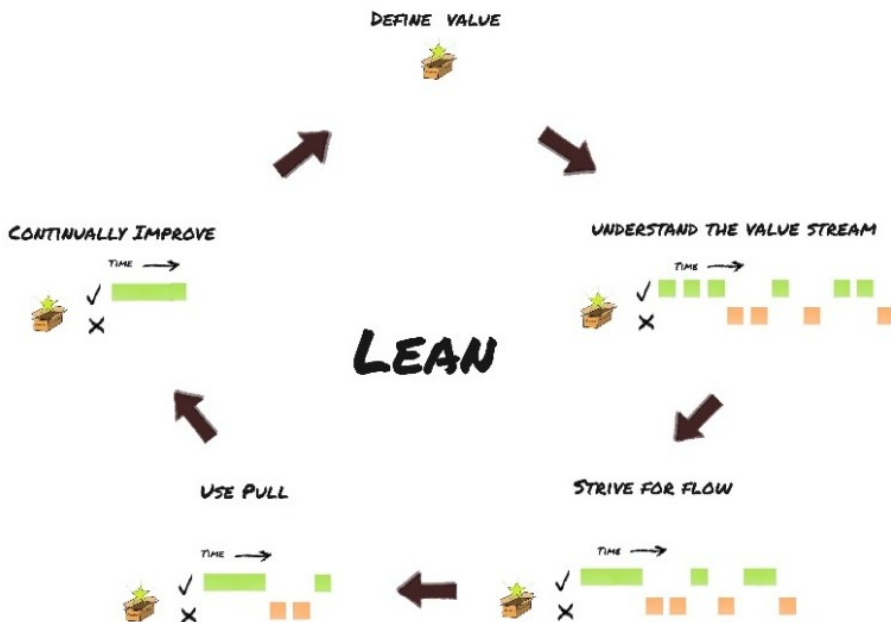
Motion

Within Lean this normally means the inefficient movement of people or machinery. It is to a lesser extent a problem today as more training is conducted online. But if a course is live and scheduled some distance from the student's office/home then this can lead to fatigue before the individual has even started learning.

The final lean waste or 'Muda' is '**Transportation**', unnecessary movement of product or materials but this does not easily fit into the training analogy.

In recent years **Under-utilised talent** has been added to the list of Lean Wastes. This is basically not allowing employees to interact with the process adding their own ideas to the workflow in order to improve it. Training that does not allow discussion, feedback or questions can effectively lose a layer of information and education which was not known at the start of the session.

Train Lean !



So how can Lean help provide better training? The lean thinking model has five basic steps:

Identify Value

Instead of creating generic courses, audit your potential students. Decide what training would be useful first, then second etc. building a list akin to a product backlog in Scrum.

Also understand the context in which these courses should be run. If I am running a Scrum Foundational course I will teach it in a very different way for Project Managers, that I would developers, that I would people with some experience in the framework.

Map the Value Stream

A value stream is a timeline where you understand which pieces of a workflow directly contribute to the outcome you want, and which do not (normally classed as one of the wastes above). Here, depending on the type of students, you would modularise a piece of training and then order it depending on the subject. To go back to our first aid example, you would teach CPR¹ first and sprains last. With other subjects it might be smarter to give an overview first and then drill down into the detail. (I created a 'COMET' system (Concept, Methodology, Tools) exactly for this type of system.) The important thinking here is that if something occurred that meant the student had to leave the course they would have learned 'the important bit'.

Create Flow and Establish Pull

These are normally two separate concepts, but they would be combined in a training context. If the courses are designed in the manner described in the previous two sections, then the students would be able to select both the courses or parts of courses to achieve a knowledge flow in order to gain the information and skills they actually need.

Seek Perfection

Feedback mechanism would be built into the sessions so that they could be improved both immediately and retrospectively. This would mean that on the next round of design such improvements could be added.

Branching out

The above suggestion would lead to a treelike structure where students could move down various branches depending on who they were, what they needed to know and the order they needed to know it, dependent on the urgency.

Safety often depends on understanding and managing risk. Increasing the efficiency of learning utilising Lean ideas can help to mitigate such risks.

References

[1] Kent Beck et al, "Manifesto for Agile Software Development", agilemanifesto.org

[2] James Womack, Daniel Jones, "Lean thinking" Simon & Shuster, 2003, Version, ISBN 0743231643

[3] Paul Lister, "Agile keys for locked down cages", 2022, ISBN 979-8446432813

Dr Paul Lister, Agile Coach with the Scrum Alliance

Certified Scrum Trainer and former physicist with a PhD in Theoretical Physics from Cambridge, Paul Lister brings over 20 years of fintech experience to helping teams minimise risk and embrace Agility. He is passionate about making work better, sharing knowledge through training, coaching, writing, and community building. He is the author of the book 'Agile Keys for locked down cages' [3] and can be found at agilekeys.co.uk.

Article and Graphics © Paul Lister

"A value stream is a timeline where you understand which pieces of a workflow directly contribute to the outcome you want, and which do not."

¹ CPR (Cardiopulmonary resuscitation) an emergency procedure used during cardiac or respiratory arrest that involves chest compressions, often combined with artificial ventilation.