

# The skinny on 'Lean' education

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Educators should learn a thing or two from the Just-In-Time and Lean production techniques used by the automotive industry if they are to add value to the student experience as quickly and effectively as possible. That's the conclusion of a report published in the *International Journal of Human Resources Development and Management*.

Meera Alagaraja of the Supply Chain Systems Laboratory, at Texas A&M University, explains how "Lean production" techniques have transformed the automotive, construction, and service industries as well as healthcare delivery. The approach is built on the concept of Lean thinking, which looks at the value chain and asks how can work be structured so that it does nothing but add value, and does that as quickly as possible?

A broader interpretation of this concept could readily be adapted to education, and in particular, adult education, Alagaraja believes. Of course, such a shift in approach would require a rethink on current course design and delivery, but the benefits could be enormous, she says.

It is globalization and the emergence of novel technologies that have spread new business models around the world and from one industry to another. The Toyota Production System is a case in point," says Alagaraja. The quality movement practices implemented at Toyota's factories in Japan during the 1950s have been applied across industries with Total Quality Management becoming common in US business and industry.

In the late 1990s, Lean principles emerged as the next step in improving industry processes. Lean production is based on so-called Just-In-Time manufacturing and Total Quality Control, and Total Quality Management, which use teams that can work flexibly enhance production flow and simultaneously make high-quality products and minimize waste. It was the recognition that such approaches were not a uniquely Japanese cultural legacy that allowed them to spread into industries across the globe.

The key to their success is that Lean thinking addresses individual, organizational and customer perspectives, rather than the simplistic approach of generic mass production. It also quickly identifies the sometimes competing perspectives of those involved in a process and addresses them directly to resolve potential conflicts that would otherwise lead to inefficiency and waste.

Alagaraja points out that traditional educational methods have for decades adopted a mass production stance with respect to teaching and learning, with all its limitations. To be effective today, education must take the Lean thinking approach, which is to adapt traditional educational methods to solve the learner's "problems" completely and give each exactly what they need and want in a cost-effective way, at an attractive price, and with minimal time wasted.

There are several key principles of Lean thinking that can be adapted to adult education and online learning, Alagaraja explains:

- Cellular processes: allow chunking of coursework so that it can be taught as valid, standalone sub-units of a complete whole.
- Policy deployment: is a strategic planning process that correlates the purpose of a course with objectives and activities.

- Flow: encourages learner ownership so that they can dwell on a topic or move along more swiftly depending on their understanding.
- Just-in-time: provides feedback on projects in time for discussion in next class session/meeting.
- "Kaizen": Allows educators to adapt the course to learner feedback.
- "Kanban": Offers learners timely feedback on their mistakes so that they can correct their understanding quickly and effectively.
- "Poka-yoke": Is mistake proofing, which involves standardizing the syllabus to prevent recurrent problems.
- "Quality function deployment": Incorporates learner needs into the design and updating of the course content.
- Standardization: Simplifies assignments to meet learner requirements.
- Theory of constraints: Identifies barriers, such as technological limitations, and removes them.
- Throughput: Designs assignments with real-life relevance.
- Value stream mapping, visual controls, and visual management: Provides a map of the course flow.
- Waste elimination: Eliminates extraneous material.

Today's adult learning environment emphasizes technology, but beyond the rhetoric of customizing education around learners' needs, the concept of Lean Thinking has the potential to improve learning, reduce time wasted, and make adult and online courses truly applicable to real life beyond the virtual school halls.

More information: "Lean Thinking as applied to the adult [education environment](#)", *Int. J. Human Resources Development and Management*, 2010, 10, 51-62

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