Five Keys to a Successful Higher Education Lean Six Sigma Deployment

By John Wilkerson, Lean Six Sigma Black Belt, Bellwether Services

Rumor has it that students, parents and the businesses community are seeking increased value for their education dollars. Some higher education institutions are looking to corporate giants for the quality tools and methods that have helped them succeed.

Organizational giants such as General Electric, Johnson & Johnson and the Department of Defense have embraced an innovative process improvement method called lean Six Sigma. This method draws from the best of most continuous improvement approaches, such as total quality management, quality circles and statistical process control. Simply stated, lean is a systemic approach for solving tactical business problems.   My deployment team and I took this tactical and systemic method to the classroom for a pilot program last year. This pilot yielded numerous and noteworthy results, both intended and unintended:

- Increased enrollment by 28%.
- Improved student satisfaction by 28%.
- Improved student project cycle time by 31%.
- Improved employer return on training investment, reducing cost by $13 million.

But before you go out and buy the latest and greatest lean Six Sigma book, I recommend you think about the success factors to applying lean Six Sigma in the classroom.

Here are my top five success factors from a real world Lean Six Sigma deployment:

Success factor 1: Link deployment goals to leadership goals

One characteristic of a successful lean Six Sigma deployment is leadership support. Many industry business executives have learned their managers will not fully endorse any new continuous improvement initiative if it is viewed as taking away from their current resources.

During our pilot we took a proactive approach and sought buy-in from all functional leaders. We developed project goals, which supported all goals from top to bottom. This was a key to keeping the team focused on the university's strategic goals.

Success factor 2: Establish a formal student feedback process early in the instructional value stream

A common term in the lean Six Sigma vocabulary is "value stream." We define value stream as the flow of information, material or knowledge required to meet a planned educational

outcome. We found the value stream concept was a difficult subject to transition from the factory floor to the classroom without a draw card theory such as double-loop learning.

Our draw card was a natural for the academic classroom and easy to implement. Simply put, after each course, we developed a process to refine curriculum to meet student and business community needs. Double loop learning allowed us to take action quickly to avoid continuous errors.

Success factor 3: Refine curriculum development processes

Speed is an important factor in industry, particularly in manufacturing where productivity is measured in seconds. As lean Six Sigma has gained traction in the service and government sectors, practitioners have learned some valuable lessons regarding speed.

Another critical success factor we learned is the need to act quickly. During our pilot, we had to revise lesson plans and case studies, and approve content in weeks within several situations. We credit our ability to respond quickly to the students and business community as primary drivers to our increased student enrollment and student satisfaction scores during the pilot.

Success factor 4: Integrate lean with Six Sigma tools in a willing culture

Six Sigma techniques are powerful, and they support reducing process variation. Six Sigma tools such as flowcharts, hypothesis tests, control charts and risk analysis will not provide the complete solution in the academic environment. Lean concepts including value add, waste reduction and cycle time are additional tools you might include a successful initiative.

The final ingredient to a successful lean Six Sigma initiative is team dynamics/culture. This was evident as we researched successful deployments at the Department of Defense. Successful implementations include strong support and a desirable end state.

Success factor 5: Start small and build on incremental successes

Risk and reward must be managed by academic leaders at all levels. Senior executives must point the direction and manage organizational performance. Mid-level directors/department leaders have the most critical role in a lean Six Sigma deployment. This group must manage both upward and downward. We found that the mid-tier academic management group, similar to that in industry, managed risk in small increments.

During our deployment, we managed risk by taking small incremental steps, as well as hiring the right technical experts and carrying out thorough research. Our pilot program yielded superior initial results. The leadership team did their homework, got the right people on the bus and built on incremental success.

John Wilkerson is a Lean Six Sigma Black Belt with Bellwether Services, a quality improvement consultancy in Atlanta. He has trained and coached Black Belts, Green Belts and executives in many industries throughout the United States. Wilkerson was the deployment leader for a lean Six Sigma pilot program that earned two international and national awards during the 2007-08 academic year. He is a part-time instructor at the Center of Continuing Education, Clayton State University, Morrow, GA.

For more information, please contact Wilkerson at jwilkerson@bellwether-services.com or 404-386-2437.

Wilkerson and his team used the following figures for their pilot program:

Figure 1

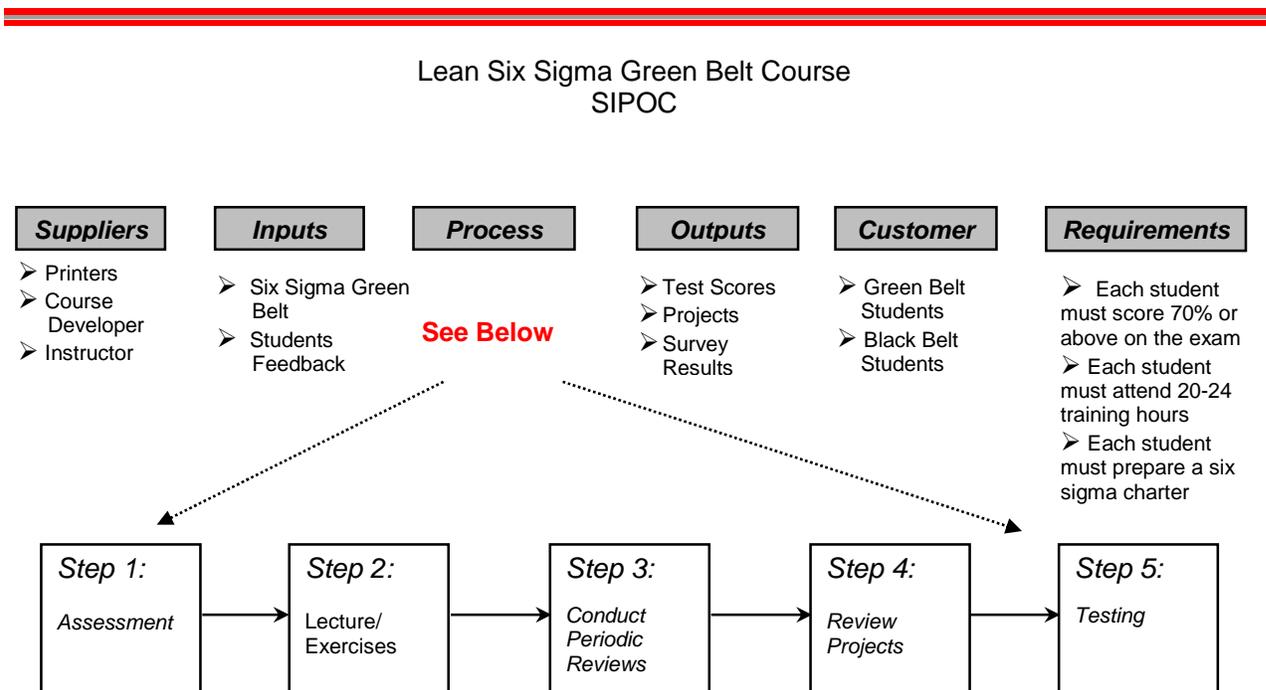## Lean Six Sigma Green Belt Course
SIPOC

Suppliers	**Inputs**	**Process**	**Outputs**	**Customer**	**Requirements**
➢ Printers ➢ Course Developer ➢ Instructor	➢ Six Sigma Green Belt ➢ Students Feedback	**See Below**	➢ Test Scores ➢ Projects ➢ Survey Results	➢ Green Belt Students ➢ Black Belt Students	➢ Each student must score 70% or above on the exam ➢ Each student must attend 20-24 training hours ➢ Each student must prepare a six sigma charter

Step 1: *Assessment*	→	Step 2: Lecture/ Exercises	→	Step 3: *Conduct Periodic Reviews*	→	Step 4: *Review Projects*	→	Step 5: *Testing*

Figure 2

SSGB Student Performance Baseline