



A Quality Culture – Don't Wait Until It's Too Late

Betty Ziskovsky, CEO
Lean Education Enterprises, Inc.

ASQ World Conference on Quality and Improvement
Session T05



Session Goals

- Understand limitations of the current system of Quality (Lean/CI) training & deployment
- **See benefits of beginning Lean/CI training prior to postsecondary ed or entry into the workforce**
- Learn how Lean/CI training can be delivered earlier
- **Discover how you can promote Lean/CI training to grow a global**

CULTURE OF QUALITY



Question...

What is a the probability of a company successfully producing widgets if 90% of its workers have no training in widget making?



Answer

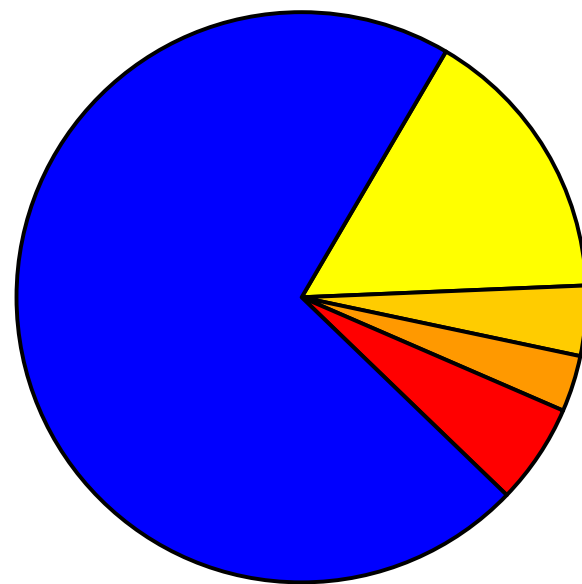
The same probability of establishing a culture of quality when less than 10% of the work force has quality training.



Culture of Quality- Current State



Post Secondary CI Training at Bachelor Degree Level



- Business Degrees W/O CI Training
- Business Degrees with CI Training
- Engineering Degrees W/O CI Training
- Engineering Degrees with CI Training
- Rest of Bachelor's Degree Population

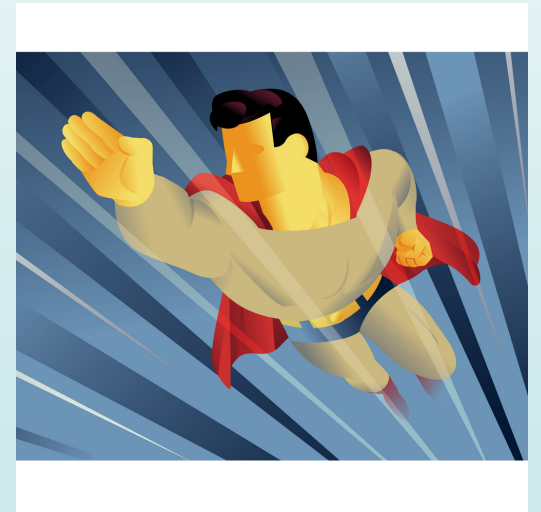
Source: National Center for Education Statistics, Digest of Education Statistics, 2007



What does this situation suggest?

Quality is the exception, not the rule

As good as our Quality professionals are, they aren't supermen or women





The Cost of Lean/CI Training

- \$ billions spent by employers on CI training for workers
- Thousands of productivity hours lost to training

Source: Enlighten.net



ASQ definition of “**Culture**”:

**integrated patterns of belief
and behavior that are readily
transmitted to succeeding
generations**



Deming:

“If you always do what you’ve always done, you’ll always get what you’ve always gotten.”



Culture of Quality Future State



WHAT IF?

future generations entered the workforce with ...

- already developed customer orientation
- understanding of & expertise in Lean/CI
- no need for training, re-training, or un-training
- expertise/comfort working independently & in teams
- disposition to meeting/exceeding high expectations



How can this Future State be achieved?

Lean/Continuous Improvement
Training begins in k-12 education



10 Advantages of training at k-12

1. Humans learn more easily as children
2. Establish CI as first learned habits
3. CI knowledge and expertise developed over 13 year period
4. CI is common sense – easily understood
5. CI & k-12 school curriculum naturally overlap



10 Advantages of training at k-12

6. Teachers as well as students learn/apply CI
7. HS graduates have 10+years CI experience
8. Businesses ↓ costs, ↑ bottom line
9. k-12 = vehicle to perpetuate CI training, build foundation of a Culture of Quality
10. Establishes means to keep businesses & individual workers competitive in 21st century



Defining Lean/CI in k-12

- Teacher/Administrative
- Students – age appropriate
 - Begins in Kindergarten
 - Grades 1-5: tools, measures, methods, kaizen
 - Lean/CI applied to learning
 - Grades 6-12: applications (projects), problem solving, kaizen
 - Graduate from High School with 13 years of ongoing training and skill development



Case Study 1

Lean/CI at k-12 TEACHERS

Complete the Curriculum
Level Loading



LEVEL LOADING THE CURRICULUM

Marrying Lean Process Improvement and Sound Educational Practice:

- Systemic thinking
- Focus on customer - not supplier
- Emphasis on value-added - mastery learning
- Standardize work
- Curriculum design and delivery founded in learning theory



CASE STUDY BACKGROUND

- **What:** World Geography
- **Who:** 4 sections, 7th grade students
- **Where:** Private Middle School
- **When:** over 2 years
- **Why:** ensure all curriculum was delivered and could be mastered



LEVEL LOAD – HOW?

1. Comprehensive pre-planning
2. Establish takt time
3. Standardize work
4. Empower students
5. Best practices – Apply Learning Theory

Week(s) of	Country(s) covered	pages in text	quiz date	notes on quiz + news articles
Sept 20-24	US and Canada	89-131	24-Sep	same
Sept 27 - Oct 1	Mexico & Central America	153-183	30-Sep	same
Oct 4 - 8	West Indies	183-193	8-Oct	same
Oct 11-15	Brazil & its Neighbors	195-210	15-Oct	same
Oct 18-22	South America		no quiz	
Oct 25-29	Andes Countries	217-232	29-Oct	same
Nov 1 - 5	British Isles & Scandinavia	255-270	5-Nov	same
Nov 8 -12	France, Germany, Benelux & Alpine Countries	277-293	12-Nov	same
Nov 15 - 19	Portugal/Spain/Italy & Greece	297-313	18-Nov	same
Nov 22 - 26	Czech Republic/Slovakia/The Balkans	332-338	24-Nov	same
Nov 29 - Dec 3	Baltic Republics/ Poland/Hungary	319-331	3-Dec	same
Dec 6 - 10	Russia & Independent Lands	348-376	10-Dec	same
Dec 13 - 17	Student Presentations		no quiz	European Xmas feast Dec 17
Jan 3 - 7	Independent/Caucasus/Central Asian Republics	383-399	7-Jan	same
Jan 10 - 14	SW Asia/Turkey/Lebanon/Syria/Jordan	408-430	14-Jan	same
Jan 17 - 21	Arabian Peninsula/Iran/Iraq/Afghanistan	431-438	21-Jan	same
Jan 24 - 28	Israel	423-427	28-Jan	same
Jan 31 - Febr 4	Exodus - the film		no quiz	
Febr 7 - 11	Middle East discussions		no quiz	Opinion paper due Feb 14
Febr 14 - 18	North Africa, the Sahel Countries	444-61;470-73;490-93	18-Feb	same
Febr 21-25	Nigeria & the Coastal Countries	484-89; 494-501	25-Feb	same
Feb 28 - Mar 4	East Africa	521-538	4-Mar	same
Mar 7 - 11	Central Africa	505-517	11-Mar	same
Mar 14 - 18	South Africa	545-564	18-Mar	same
Mar 28- Apr 1	Wolfridge	no assignment	no quiz	no classes all week
Apr 4 - 8	Antarctica	718-723	6-Apr	same
Apr 11 - 15	South Asia/Subcontinent/Himalya & Island Countries	574-602	15-Apr	same
Apr 18 - 22	China/Mongolia	609-626	22-Apr	same
April 25- 29	Japan & the Koreas	633-648	29-Apr	same
May 2 - 6	Mainland SE Asia & Islands	655-668	6-May	same
May 9 - 13	Australia/New Zealand	678-723	13-May	same
May 16 - 20	Oceania	710-723	20-May	same
May 23-27	Carmen San Diego world competition/Geography Bee		daily	the world
	competition quizzes earn no grades - only bragging rights and prizes			



Schedule – Standard Work

- **Monday** – give out standard materials for week + lecture
- **Tuesday** – lecture
- **Wednesday** – map work
- **Thursday** – Regional dilemma + review
- **Friday** – test over week's work + collect map



APPLY LEARNING THEORY

- Pacing of information/work flow
 - Lean to Learn TM
- Implement sufficient impression opportunities to secure mastery through amortized repetition
- TWI

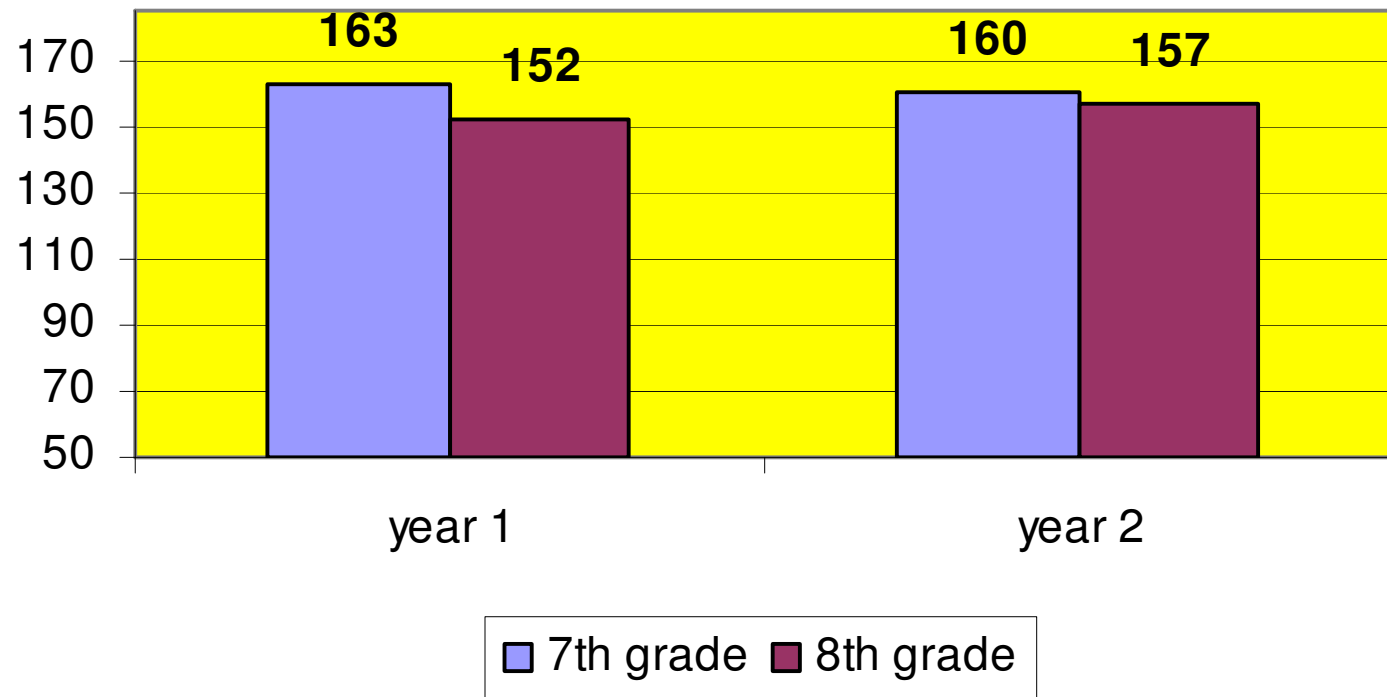


PERFORMANCE OUTCOMES

- Both years entire curriculum delivered
- School performance in WG goes from rating of “needs improvement” to “area of strength” in one academic year
- Long term memory retention



Performance Outcome - Alumni Meet



Student Retention of Learning (Mastery) One Year Later



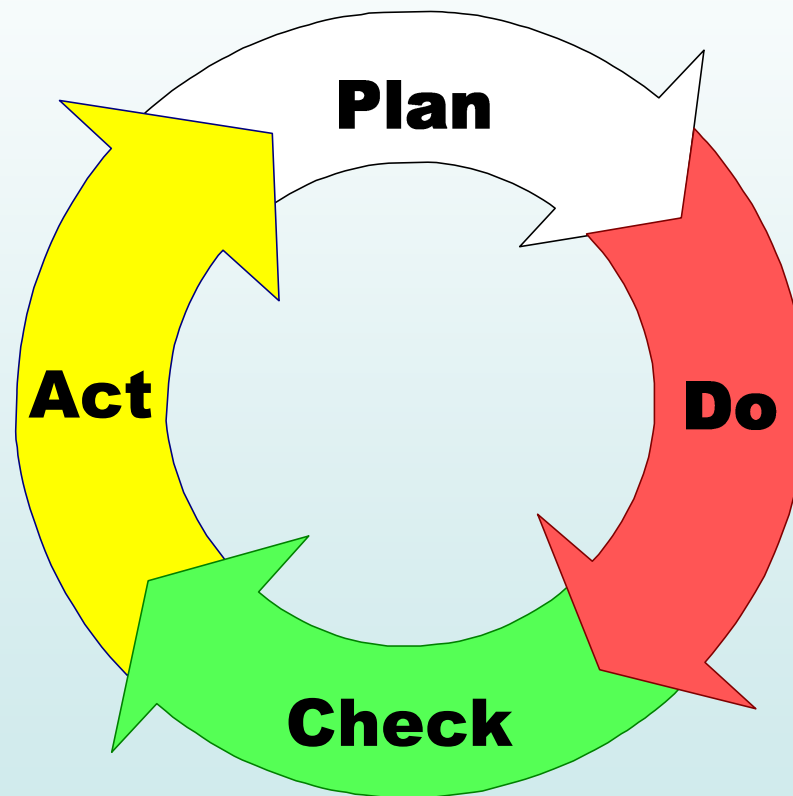
Case Study 2

Lean/CI & Kaizen at k-12 STUDENTS

Improving Learning & the Learning Environment



KAIZEN: PLAN-DO-CHECK-ACT/ADJUST





STUDENT TRACKER LOG

Student Name Doug - Benchmark Test date Oct 2

PLAN - List each activity, time spent on each, and repetitions of each you plan to do to prepare for your test.

Read over text once - day assigned ~ 2 hrs
Skimmed text day before test ~ 20 min
Went over questions at end of chapter day before test

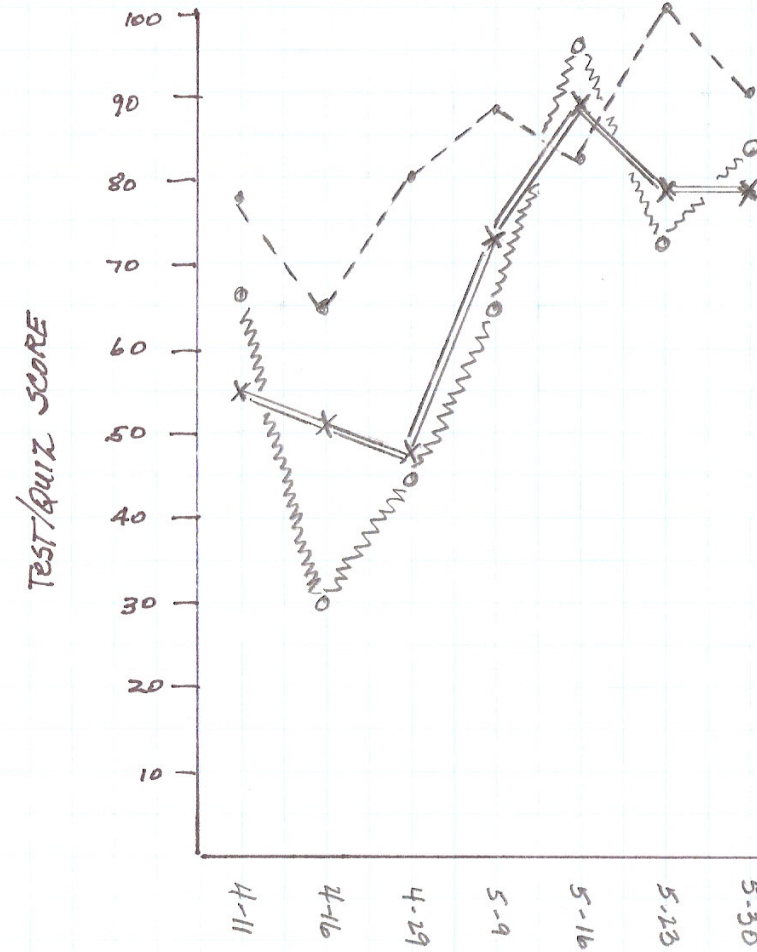
DO - Did you prepare exactly as you planned? Yes No If no, list exactly what you did do.

CHECK - Your test score 67. Did you get the results you wanted? Yes No

ADJUST - If you got the results you wanted, **CONGRATULATIONS!** You have discovered the formula that works best for you to prepare for exams! Try the same thing two or more times to see if you get similar results.

If you didn't get the results you wanted, you need to adjust. **Same plan = same results.** What can you do differently for next time? What additional things can you do? What really was a waste of time? Did you use activities that are consistent with your learning style - the way you take in information? Did you give your brain a chance to absorb the information? (Remember, your brain is not built for cramming. It takes 10 impressions to get information into your long term memory. It is best to make those impressions using various formats: flashcards, writing, talking, seeing, hearing on tape, discussing and thinking about, seeing charts or maps, etc.). Identify and list below some different things that you think will be good options to try for next time. Then fill out your next plan sheet and put it in your binder. **YOU CAN CONTROL YOUR LEARNING!**

This didn't work. I need to remember more details.
- Skimming - (didn't help - waste of time)
+ read a 2nd time and create notes of important i
+ study from notes B/4 test



STATE HISTORY & GOVT

DATE/TEST SUBJECT



Examples of Kid Kaizen

- **Kindergarten** – how can we work together to keep our toys clean
- **Third grade** – how can we improve our reading scores
- **Sixth grade** – how can we reduce waste in the classroom – be more efficient with resources
- **Tenth grade** – how can we improve the service hours review process



Put Students in Active Role of Problem Solvers!

- Daily classroom challenges
- Assigned Projects



Promoting a Global Culture of Quality

What YOU Need to DO

- *Advocate for Lean/CI as a pre-requisite for High School graduation in your k-12 system*
 - *You get what you ask for*



Thank you for coming!

bettyz@leaneducation.com