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NOTES ON TQM (TOTAL QUALITY MANAGEMENT) AND EDUCATION

Try to envision the following company:

It turns out 1,000,000 items a year from its assembly line.

At the exit point, it inspects the products and concludes that 100,000 of them are defective. It labels these “defective” and discards them.

It then calls a press conference to announce proudly that it has rejected 10% of its production, thus demonstrating the company’s high standards.

It did the same thing last year. It will do the same thing next year.
And the next.

It advertises this process in its literature -- “one of the highest reject rates around.”

Its employees routinely boast about the high inspection standards and make cynical comments about the low quality of the output.

Within the company, the high reject rate is generally attributed to the poor quality of raw material. Nobody, however, actually tries to do anything to improve the raw material. Instead, everyone merely complains about it.

Even though it is commonly known that one machine turns out a disproportionate share of rejected material, the company continues using that machine because replacing it would be cumbersome.

The company is controlled by Directors who focus only on input criteria – how many hours are worked, for example – and who measure the company’s effectiveness only by the cost-per-unit-of-production, without considering rejects. Rejects, after all, are a source of pride.

There is no incentive for changing anything. Workers are paid regardless of the output.

Reforms, when they are undertaken, consist mainly of filling out forms documenting and classifying the different kinds of failure – thus reducing the time that the company could devote to its processes and products.

Standards for evaluating the finished product change over the years. Something that is approved today might not have been approved ten years ago. In actual fact, nobody really has any clear idea about what makes the product acceptable or not acceptable.

Virtually everyone agrees that the quality of the company's output has declined markedly during the past 30 years.

Anyone listening to this description will surely recognize several problems.

For one thing, the company's boasts are misplaced. Whereas it seems to think it's bragging about success, it's really bragging about failure. No less than 10% of its work is defective.

For another, its exclusive focus on *finished products* is simply foolish. What it obviously should be doing instead is focusing on the *process* to see why so many defective products keep coming off its assembly line. Something is clearly wrong with the machines, and thus it is the machines, not the output, that should be labeled “defective” and discarded.

Finally, the sheer inefficiency of such an operation – the continuing failure to address the problems, the use of the wrong measures to evaluate the operation, the absence of incentives to undertake change – is staggering. With any serious competition, this appalling company will almost surely not be able to remain in business long.

The company is, of course, our education system. In an age when practically everything else has made startling improvements, education goes on pretty much as it did 50 and 100 years ago.

We wait until the students’ work is complete and then inspect it.

We proudly fail a substantial number of students and use that fact as evidence of high quality. (The press conference to announce the high failure rate is a fact. One New Jersey college president proudly used to call such a press conference at the end of each semester to boast about his institution’s tough standards.)

Even if we know that failures repeatedly come from one department or one teacher, we do nothing about that situation. In fact we sometimes use the high failure rate as a reason for praising that department or teacher – really high standards, really demanding!

Boards of Education and Boards of Trustees measure success by how much money they save in running the schools. Nobody bothers to check the output.

Most of the teachers long ago gave up on anything except trying to do their own work adequately and within the guidelines. Some of them, in fact, have never tried to do anything more than that. And some, of course, don't even do that much. There is, after all, almost no incentive, since rewards have no relation to effectiveness.

Attempts at “improvements” and “reforms” have produced only temporary increases in resources (like “We’re going to spend an extra \$50,000 on reading improvement this year”), superficial changes in facilities (like “We are replacing all temporary classrooms”), or arbitrary goals (like “a 20% improvement in math scores by the year 2000”).

Attempts to discuss what really needs to be done, instead of these ineffective “improvements” and “reforms,” meet with a volley of negativism, including (but not limited to) the following:

It would cost too much.

The Board would never approve that.

How do you plan to get this past the accrediting agency?

Parents wouldn't stand for it.

It would hurt the students' SAT scores.

It would lower our school's ranking in the state.

Our students' chances of getting into top colleges would be reduced.

If we tried anything different, the Administration would assume we weren't doing our prescribed jobs and so would add on extra work.

All it's going to mean is more paperwork.

How will this affect tenure?

How will this affect salary?

This would require more work.

The students we get aren't good enough to do this.

The students aren't mature enough to handle this kind of thing.

Our teachers aren't trained to do this.

(from the teachers) Do you really think you can change Miss Mudslide?
She's been teaching this way for 43 years and has won "Teacher of the Year" four times.

(from the students) Oh god, not another experiment at our expense!

(from everybody) Well, I see what you mean, but it would never happen here.

In short, cynicism, complacency, contempt, self-interest, resignation, and despair are so deeply engraved into every facet of every level of education that the system does not – to be polite about it – seem to be a promising object for real reformers to tackle.

I would like to say all the following things anyway.

Presented here are observations based on (1) W. Edwards Deming's famous 14 points for quality improvement in industry, (2) a lesser-known book, Quality Education, by Gray Rinehart (1992), and (3) a bunch of other books.

In order to understand what Deming is saying, one has to understand four concepts:

- (1) The **system** means interdependent components working together toward a specific goal. To manage a system one has to know the components, the inter-relationships, and the goal. The object is to optimize the system for the benefit of everybody involved. The techniques are to encourage communication and cooperation among the components, and to judge the performance of each component by its contribution to the system. No operating in a vacuum, no building of little empires. All that matters is *optimization of the system for the benefit of everybody involved*.

- (2) **Variation** means simply the normal range of things. Things do vary,

and it's entirely normal that they do. A manager has to determine what's within and what's without this normal range, and then has to distinguish between the variations that are caused by a common cause and those that are caused by special causes.

(3) **Knowledge** has to be distinguished from information. Until there's some kind of theory linking the information, it doesn't become knowledge. Knowledge also is a predictor: when information has been incorporated into a theory, then the theory can be used to explore the future.

(4) **Psychology** means relying on internal rather than external motivation. Higher pay, merit awards, bonuses, and such things are the tools of prostitution; internal motivators are the only valid kinds of psychology.

Okay, here goes with Deming's 14 points, Rinehart's re-statement of each for education purposes, and some observations.

Point #1

Deming's Point #1: **Create constancy of purpose toward improvement of product and service, with the aim to become competitive, stay in business,**

and provide jobs. Note that this doesn't mean improving the product; it means improving the process. Huge difference.

Rinehart's Education Version of Point #1: **Create constancy of purpose toward improvement of education, with the aim to prepare people for the future by providing joyful learning experiences that develop their potentials fully.**

Somewhere in here is the suggestion that every single day each person must make note of something that can be done better the next day, in the direction mentioned.

Don't let the "future/joyful/potentials" rhetoric turn on your cynicism lights:

What he means is the opposite of destroying individuals by constantly having them fill in busywork formulas which consume their lives, their time, their creativity.

The two biggest considerations here are that this requirement is system-wide, not individual, starting from the very top and going to the very bottom, and that the view must be long-term, not short.

Point #2

Deming's Point #2: **Adopt the new philosophy.** In short, this isn't a system that begins as a dictum from the superintendent's office. Every single person at every single level must become committed to the concept.

Rinehart's Education Version of Point #2: **Adopt the new philosophy.** Thinking about, talking about, emphasizing, and focusing on quality aren't what this means at all. It's not a tool, a fad, or a technique – it's a concept. Quality is not a measure of success; it is the measure of success.

“Adoption of the philosophy” means a change in the whole object/goal/intent of what we do. Nothing like such change has ever occurred in my life, nor, I suspect, in most people's. This is no superficial slogan, no wearing of a pin on our lapel. Put away your nets and follow me and I shall make you fishers of men. Give up everything you have thought before, and commit yourself entirely to the new concept.

Point #3

Deming's Point #3: **Cease dependence on inspection to achieve quality.**

Inspection deals with products; quality deals with processes. If something's wrong with the product then it's the process that needs to be changed. This principle applies equally to incoming materials and outgoing goods: inspection is too late, ineffective, and costly.

Rinehart's Education Version of Point #3: **Cease dependence on comparative and competitive testing.** Tests usually test information, not

knowledge; they don't reveal very much; they cause ill-will. Evaluation will certainly have to continue, but it should be future-based.

Performance, depth, assimilation, understanding, initiative, interest, compassion, and a few other such things are what lead to productive lives. If those could be evaluated, instead of the things we now test, we would have made a move toward adoption of the total quality system.

Point #4

Deming's Point #4: **End the practice of awarding business on the basis of price tag alone.** Using lowest-price things usually ends up costing more in the long run. Choice of business partners should be more by quality than by price.

Rinehart's Education Version of Point #4: **Work with suppliers to continually improve the quality of incoming people, equipment, and supplies.** Work with colleges to get the kind of teachers the school wants; work with parents and the community to get the kind of students the school wants; work with teachers to devise the kind of employment arrangement most conducive to good performance; work with publishers,

manufacturers, and contractors to get the best books, equipment, and facilities. Constantly looking for improvement – that’s the key idea in all these points.

How many times a day, I wonder, do we say “I wish that XXX were different”? If we made note of all these ideas and did something instead of just wishing, it would, finally, make a difference.

Point #5

Deming’s Point #5: **Improve constantly and forever the system of production and service, to improve quality and productivity, and thus constantly decrease costs.** The public perception that quality costs more is wrong; it is never cheaper to do something badly or to have to do it over a second time.

Rinehart’s Education Version of Point #5: **Improve constantly and forever the system of instruction and service.** Teachers and administrators must constantly improve their own work and must constantly look around them to see what new things need doing.

We all have pretty clear ideas about what does and doesn't work; all we have to do is peel off the bad and focus on the good – day after day, year after year. Quality is never accomplished; it is a process. If we do something that doesn't work, we must never do it the same way a second time.

Point #6

Deming's Point #6: **Institute training on the job.** If new workers learn how to work only from old workers, no progress will ever occur. The mistakes of the past will be perpetuated.

Rinehart's Education Version of Point #6: **Institute training on the job.** Teacher-training shouldn't be thought of as something that occurs before a teacher starts; it's a lifetime process.

Just think how much expertise is lost because teachers never see one another teach, administrators never see one another administrate, and so on. In our present modes of operation we have virtually no system for improving our processes.

Point #7

Deming's Point #7: **Institute leadership.** Managing and leading aren't the same things. That "philosophy" mentioned back in point #2 requires leadership at every level.

Rinehart's Education Version of Point #7: **Institute leadership.** If ever any group has been guilty of managing instead of leading, surely it's school people.

Just imagine what a change would occur if school officials actually pursued a vision instead of satisfied a requirement. More, below, in the next point.

Point #8

Deming's Point #8: **Drive out fear, so that everyone may work efficiently for the organization.** Fear of job loss, of obsolescence, of appearing inept, of being blamed for things beyond one's control, of being ostracized – these are all over the place in business, and they exercise total control over a huge proportion of the way workers behave.

Rinehart's Education Version of Point #8: **Drive out fear, so that everyone may work effectively in school.** Everybody in school is scared; at least half of what we do is designed to cover our asses instead of to accomplish any worthwhile objectives. Students are at least as scared as teachers.

Fear, which is not a productive emotion, may be the single largest motivator in the traditional school. We are afraid of the state, of the district, of the school down the street, of the Board of Education, of the parents, of the teachers and their unions, of the general public, of the students, of the alumni, and probably of several other groups too. Fear can, if one adopts a total change, be entirely replaced.

Point #9

Deming's Point #9: **Break down barriers between departments.** Since quality is a totally-encompassing system-wide concept, the need for communication, cooperation, and understanding among departments should be obvious.

Rinehart's Education Version of Point #9: **Break down barriers between departments.** Between administrators and teachers, between

athletics and academics, between counselors and teachers, between grade levels – barriers are everywhere in schools.

If everybody is really involved in the total commitment to total quality, then barriers won't exist. If barriers exist, then everybody won't be involved . . . Schools are probably worse about barriers than businesses are. In a business, because there's a profit involved people realize that if one end of the boat sinks, the other end is going to sink too. Since schools don't make a profit anyway, nobody has to think about things like that.

Point #10

Deming's Point #10: **Eliminate slogans, exhortations, and targets for the workforce asking for things they cannot deliver.** Exhortations are insulting; they imply that workers aren't doing their jobs.

Rinehart's Education Version of Point #10: **Eliminate slogans, exhortations, and targets for students and teachers.** They don't do any good, and they're irritating.

They also detract from what is really meant by the concept of quality. If people think of quality as something that can be encapsulated in a slogan, then we're back to another one of those "excellence" binges that produce no results.

Point #11

Deming's Point #11: **Eliminate numerical goals (quotas) for both workers and managers.** The entire emphasis on productivity has to be replaced by an emphasis on quality. Aiming for numbers creates a lot of waste and probably ends up costing more. Anyway, it's a dumb idea: if the workers could have produced more without any changes in the process, then why didn't they already do it?

Rinehart's Education Version of Point #11: **Eliminate numerical quotas for teachers, students, and administrators.** Goals like the ones published every few years by governmental organizations are utterly arbitrary and unrelated to the system and its purpose.

The whole idea that a school should improve its graduation rate, the foreign language proficiency, or the geographical knowledge of its students to meet somebody's declared standard is so stupid it's a wonder anybody has ever paid any attention. Yet every school does pay rigid attention to such things.

Point #12

Deming's Point #12: **Remove barriers that rob people of pride of workmanship.** Providing proper tools, materials, environment, and information to do a job correctly will have the result of creating pride in the job – which is another way of saying quality.

Rinehart's Education Version of Point #12: **Remove barriers that rob students and teachers of pride of workmanship.** Busywork assignments, humiliating grades and class rankings, and all such things that stifle creativity and teamwork can be eliminated; in fact we already know how to do so.

There isn't any reason why students shouldn't love school – or to put it the other way, there isn't any reason why schools shouldn't be lovable. Companies can be; why can't schools? Everybody likes to do good work, so why not in school too? Fear of punishment shrouds a school and its students; pride in work should and could replace fear.

Point #13

Deming's Point #13: **Institute a vigorous program of education and self-improvement.** Only employees who are continuously growing can handle the responsibilities that quality places on them.

Rinehart's Education Version of Point #13: **Institute a vigorous program of continued education and self-improvement for everyone.** This point does not in any way resemble the present practice of paying higher salaries for accumulating graduate credits or degrees. Instead it refers to creating an atmosphere in which teachers and administrators will forever be searching both inwardly and outwardly for new knowledge and ways of learning – finding and attending seminars, inventing their own seminars, encouraging others to explore ideas with them, and so on. If they don't do (and aren't permitted and encouraged to do) these things, the constant quest for quality cannot possibly succeed.

Just imagine the sense of exhilaration, the excitement, the constant probing into new areas that would occur if a group of educated educators were given the incentives and the freedom to undertake a continuous search for new ideas.

Point #14

Deming's Point #14: **Put everybody in the company to work to accomplish the transformation.** Managers must not simply say things about quality; they must do things. Every worker must see the evidences in every other worker. If even one person doesn't understand and work toward the transformation, it will not succeed.

Rinehart's Education Version of point #14: **Take action to accomplish the transformation and include everyone in the school in the effort.** Leadership from the top, hard work by everyone, and a firm determination to see it work – these are the requirements.

Just getting rid of the negativism would be a large part of accomplishing this point. If, instead of complaining about one or another part of our jobs, we all spent our time devising improvements to the system, with total confidence in and

cooperation with everyone else, and with no cynical observations – just think how much could get done!

The following immortal bit of verse came to my attention while browsing through Rutgers University's Dana Library collection of books on Quality Management.

**If you do
what you've done
you'll get
what you've got.**