

ARTICLE

Quality of Papers Stems from Authors and Quality of Teaching Stems from Professors

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ABSTRACT

On the web it is very frequently found that good papers are published only in “Peer Reviewed Trusted Journals (PRTJ)”, while low quality papers are published in the “Predatory Publishing Journals”. Here we show that this is not true, because the quality of papers depends on the quality of the authors in the same manner that quality of teaching depends on the quality of professors. Since generally the authors are professors it is important to see the two sides of the “publishing medal”: authors and professors. We will use the SPQR Principle [«*Semper Paratus ad Qualitatem et Rationem* (Always Ready for Quality and Rationality)»] as the way to analyse papers, books and teaching; it seems that very few people have taken care of Quality of Methods (Deming, Juran, Gell-Mann, Shewhart, Einstein, Galilei). The cases analysed here are from PRT Journals and teaching documents.

1. Introduction

There are many Open Access Journals which publish papers and ask a fee for that [named APC (Article Processing Charge) or a similar acronym]. They are classified, in Wikipedia, as “Predatory publishing”.

There are several scholars thinking that a proof of documents Quality depends on their citations; this author saw that the BAD attitude is well diffused: those researchers do not consider that citations depend many times on the

readers that are unable to evaluate the scientificity of the ideas given in the papers^[39-116] because they do not analyse the data Scientifically and are unable to decide if the methods provided are Scientific or not.

Unfortunately, Universities generate a great need of publishing papers, because they ask for publications to become professors. This author had the opportunity to analyse many of those papers and many times when he asked to the applicants (for professorship) “Why did you write such a statement...” he received the reply either “My

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colleague wrote that,,” or “I found it in Wikipedia” or “I read it in that book...”: in spite of their incompetence, they were promoted to become professors!

See this from A. Einstein thinking: «An Academic career poses a person in an embarrassing position, asking him to produce a great number of scientific publications...».

This is a concept shared by this author [99], because he saw many researchers doing that, without taking care of Quality of papers. [83-101] The author met several professors who wrote wrong papers and were teaching wrong ideas to their students, using wrong books. [10-24]

There is a vast criticism about Open Access Journals (OAJ) on the web: since they ask fees for publishing papers OAJ are considered as “means for tricking people”; see for example, for SPG, in [1, 2] “Science Publishing Group is not read by scientists...”

Actually, author’s opinion (based on his long experience) is that the quality of papers is not related to the fee, asked by the OAP; on the contrary, it depends mainly on the authors low quality and on the Peer Reviewers; it is the same for “trusted magazines and journals” [83-127].

To avoid that, this author invented the SPQR Principle [«Semper Paratus ad Qualitatem et Rationem (“Always Ready for Quality and Rationality”)»] as the way to analyse both books and papers [112]; only that very few people have been considering carefully Quality of the Methods: e. g., Deming, Juran, Gell-Mann, Shewhart [3-8]. The author never met somebody else who did that... As a consequence, professors, researcher, managers, scholars and students have been learning wrong ideas, in the Quality field: there is worldwide used book with many wrong concepts {e.g., D. C. Montgomery falls in contradiction! He spreads wrong concept on Quality [9, 10]}. Is an OAP the publisher Wiley & Sons? Obviously not! See the Formula 1 Race in Bahrain (December 6 2020): Bottas 4 pt., Russell 3 pt., Vettel 0 pt., Leclerc 0 pt.: Mercedes had lower “quality” than Ferrari!!! A similar case happened in Abu Dhabi; Bottas 18 pt., Hamilton 15 pt., Vettel 0 pt., Leclerc 0 pt.: Mercedes had again lower “quality” than Ferrari!!!

In this paper we shall use various ideas that the readers can find in the paper [99]. It is a paper from an Open Access Journal; is it not read? We do not know. If really it is not read it is important to repeat some ideas you can find there.

We will cite several times the QEG of a University; quite a few professors in QEG still suggest the Montgomery books to students; bad idea: see the case analysed in [112] which has various problems [11, 12]. In the web (www.qualityengineering.polito.it) you can find the hyped ideas of QEG about “their Quality”. Fantastic... See Ref.

The last paper you can find there is [128] (M. Galetto

et al.). Surely, that journal is not OAP! The paper shows some methods for the analysis of experimental and optimisation of a process for Selective Laser Melting. There one find the Design of Experiment (DoE) and analysis about which the authors consider very “effective... [128]”.

Here are the data.

Table 1. [full design 3³; measured Hardness is the response]

Run	P(W)	V(mm/s)	hd(mm)	ψ(J/mm ³)	Hardness(HB)	Test no.	level	level	level
1	340	900	0.11	114.48	85.7	1	1	1	1
2	340	900	0.15	83.95	90.3	2	1	1	2
3	340	900	0.19	66.28	103.7	3	1	1	3
4	340	1300	0.11	79.25	96.7	4	1	2	1
5	340	1300	0.15	58.12	115.0	5	1	2	2
6	340	1300	0.19	45.88	121.0	6	1	2	3
7	340	1700	0.11	60.61	120.3	7	1	3	1
8	340	1700	0.15	44.44	118.7	8	1	3	2
9	340	1700	0.19	35.09	119.7	9	1	3	3
10	355	900	0.11	119.53	76.0	10	2	1	1
11	355	900	0.15	87.65	87.7	11	2	1	2
12	355	900	0.19	69.20	99.7	12	2	1	3
13	355	1300	0.11	82.75	108.0	13	2	2	1
14	355	1300	0.15	60.68	116.3	14	2	2	2
15	355	1300	0.19	47.91	119.7	15	2	2	3
16	355	1700	0.11	63.28	114.7	16	2	3	1
17	355	1700	0.15	46.41	118.7	17	2	3	2
18	355	1700	0.19	36.64	115.3	18	2	3	3
19	370	900	0.11	124.58	78.7	19	3	1	1
20	370	900	0.15	91.36	87.3	20	3	1	2
21	370	900	0.19	72.12	84.7	21	3	1	3
22	370	1300	0.11	86.25	100.3	22	3	2	1
23	370	1300	0.15	63.25	110.3	23	3	2	2
24	370	1300	0.19	49.93	118.3	24	3	2	3
25	370	1700	0.11	65.95	120.3	25	3	3	1
26	370	1700	0.15	48.37	116.3	26	3	3	2
27	370	1700	0.19	38.18	116.3	27	3	3	3

And here, there is the optimum they find....

Control factors				Response predicted value	
P (W)	v (mm/s)	h _d (mm)	ψ (J/mm ³)	Response value (HB)	Response 95% CI (HB)
340	1538.4	0.19	38.78	122.45	(118.08;126.83)

Response optimisation and predicted value

Excerpt 1. (from [128])

Any intelligent student can easily find that the optimum is already in Table 1, without any use of Minitab!

We will see later other findings of QEG.

QEG team thinks that citations are very important for measuring quality of papers.... Actually there are various ideas about Bibliometrics in the paper [97] The interested reader can see there.

In the paper [112] we analysed a case taken from a QEG book [32] (published by Springer-Verlag which apparently is not an OAP!!!); it is an application of DOE, as the one in Table 1 (where there are the data...). There [32] we did not have the data; that was a situation where several times a reader can find himself: the authors of the documents provide their *conclusions* and the reader has not *any possibility of verifying them: "Take it or leave it"!* It is the same in [33], another NOAP!

Other wrong documents are [9, 10, 11, ..., 29, 30, 31]: they are not published by OAP, asking the fee. There any intelligent reader can see that, for OAP documents, the Quality depends on the authors.... and on the "Peer Reviewers"; you can find many ideas in the papers [111, 112]. See also Figure 2.

Readers do apply SPQR, in order not to be cheated; if you use your own intelligence and that Principle you understand clearly the issue (remember the Quality Tetralogy: every Scholar must remember Figure 1).

The present paper (as many others of this author, in References) is written for Managers, for Students (who will become Managers), for Young Researchers (who will become Scientific Researchers), for Scholars (who want to learn good ideas Scientifically), and to Professors.

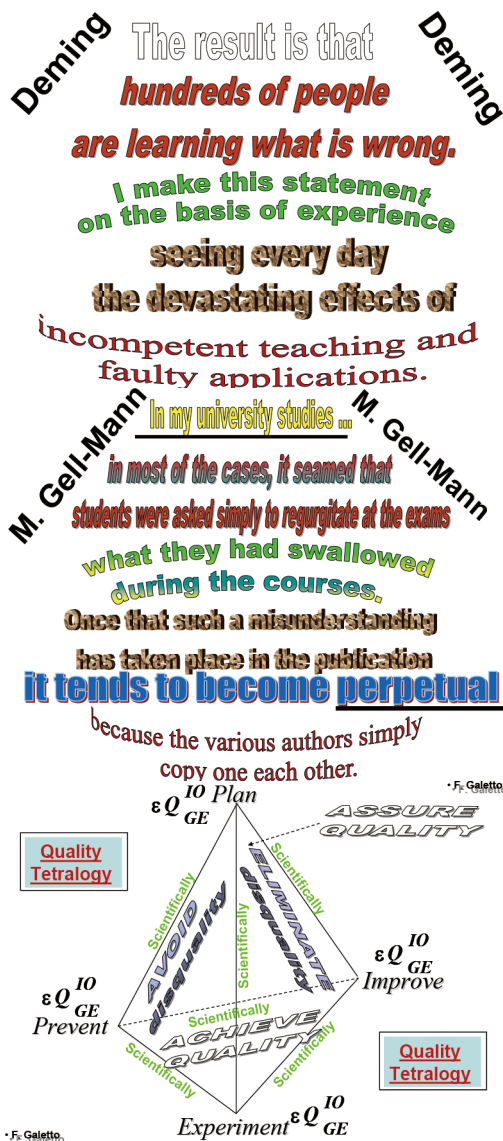


Figure 1. Statements from Deming, Gell-Mann, Galetto ideas.

As appreciated by J. Juran who, at the 1989 EOQC

Conference in Vienna, highlighted the content of the paper [50] about the importance of the Quality of the methods for making quality: the paper shows the only good methods are crucial for suitable decision taking.

Since the data are unfortunately always variable we must take into account all the uncertainties, because they have consequences on our decisions: we face "decision-making under uncertainty".

In many cases, a reader is confronted with the fact that he does not have the data; therefore he cannot analyse the authors' conclusions; this is a very bad situation.

Other times it is very easy to find the errors; see the following wrong attached statement taken from a course on Quality Management, where QEG members suggest Montgomery books to students [111]

===== **MEDITATE** ===== SPQR ===== IXΣ ===== 🖱

$$\sigma_{\bar{x}} = \frac{\sigma}{\sqrt{n}} \quad (\text{from statistics: central limit theorem})$$

===== 🖱 =====

Any good student knows that the previous formula holds for any distribution and any sample size n: the Central Limit Theorem does not have any importance for that, BUT QEG professors do not know that!!!!!! Remember: that formula holds for any distribution and any sample size n.



Figure 2. The SPQR Principle.

Several F. Galetto documents [from 37 to 112] proved and are proving that the negative considerations on the OAP [1, 2] are valid also for other publishers: see the references and Academia.edu and Research Gate.

Remember J. Juran [50] for Decision-Making.

2. A first Case of a Non-OAP Paper

We consider here the content of a paper, published by NOAP, that has the same problems of the OAP: the cause

is the authors' and Referees' incompetence. It is the first of two papers both related to the QEG Turin Politecnico... F. Galetto did not have any success in inviting them to act scientifically, many times, in their work!

The members of QEG think that papers published in *Trusted Journals* are good, by definition: several times that is untrue.

We consider first the paper [128]. The author uses in the paper the data (nc stands for number of non-conformity, while p is the proportion) from the Montgomery book, the book suggested [as done by the QEG] to his students; *TQM* is a NOAP, obviously.

[126] is another paper of him...

Table 2. taken from [128]

first 30 samples for the Control Chart Setting																	
sample	nc	p	sample	Nc	p	sample	nc	p	sample	Nc	p	sample	Nc	p	sample	nc	p
1	12	0.24	2	15	0.30	3	8	0.16	4	10	0.20	5	4	0.08	6	7	0.14
7	16	0.32	8	9	0.18	9	14	0.28	10	10	0.20	11	5	0.10	12	6	0.12
13	17	0.34	14	12	0.24	15	22	0.44	16	8	0.16	17	10	0.20	18	5	0.10
19	13	0.26	20	11	0.22	21	20	0.40	22	18	0.36	23	24	0.48	24	15	0.30
25	9	0.18	26	12	0.24	27	7	0.14	28	13	0.26	29	9	0.18	30	6	0.12
second 24 samples for evaluating the improvement of the nonconformity (nc)																	
sample	nc	p	sample	Nc	p	sample	nc	p	sample	Nc	p	sample	nc	p	sample	nc	p
1	9	0.18	2	6	0.12	3	12	0.24	4	5	0.10	5	6	0.12	6	4	0.08
7	6	0.12	8	3	0.06	9	7	0.14	10	6	0.12	11	2	0.04	12	4	0.08
13	3	0.06	14	6	0.12	15	5	0.10	16	4	0.08	17	8	0.16	18	5	0.10
19	6	0.12	20	7	0.14	21	5	0.10	22	6	0.12	23	3	0.06	24	5	0.10

The following Figure 3, taken from Montgomery book, shows the Control Chart, when all the samples are considered.

The author puts $x=1/t$ and computes the means \bar{t}_1 and \bar{t}_2 of the time lengths related to the 1st 30 samples and the 2nd 24 samples; he then interpolates the proportion p of the nonconformities \bar{p}_1 (mean of the 1st 30 samples) and \bar{p}_2 (mean of the 2nd 24 samples) both concentrated, respectively, at \bar{t}_1 and \bar{t}_2 !!!! There are *only* two values for the nonconformity proportion p with *only* two time means: from these two points one can easily find the estimates of "a" and "c".

The interpolation is made with a curve having equation $y=c+ax$; a and c are estimated by

$$\hat{a} = \frac{\bar{p}_1 - \bar{p}_2}{\frac{1}{\bar{t}_1} - \frac{1}{\bar{t}_2}} \text{ and } \hat{c} = \bar{p}_1 - a \bar{t}_1$$

with variance

$$\sigma_a^2 = \left[\frac{\bar{t}_1 \bar{t}_2}{\bar{t}_2 - \bar{t}_1} \right]^2 (\sigma_{p1}^2 + \sigma_{p2}^2)$$

and

$$\sigma_c^2 = \left[\frac{\bar{t}_2}{\bar{t}_2 - \bar{t}_1} \right]^2 \sigma_{p1}^2 + \left[\frac{\bar{t}_1}{\bar{t}_2 - \bar{t}_1} \right]^2 \sigma_{p2}^2$$

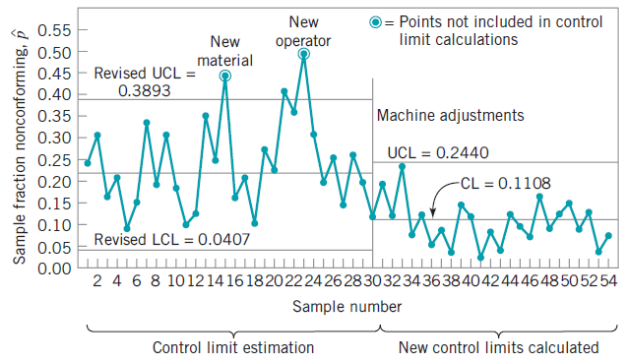


Figure 3. The Example of a Control Chart from Montgomery book

\bar{p}_1 is the mean of the 1st 30 samples and \bar{p}_2 is the mean of the 2nd 24 samples!!!! They are the *only* two values for the nonconformity proportion p with *only* two time means: from these two points one can easily find the estimates of "a" and "c". With 30 values p_i and the other 24 p_j we have two "estimators" \bar{P}_1 and \bar{P}_2 (Random Variables) for which we can "accept" the Central Limit Theorem: they follows the normal distribution and then we can compute the Confidence Intervals (CI) [99, a].

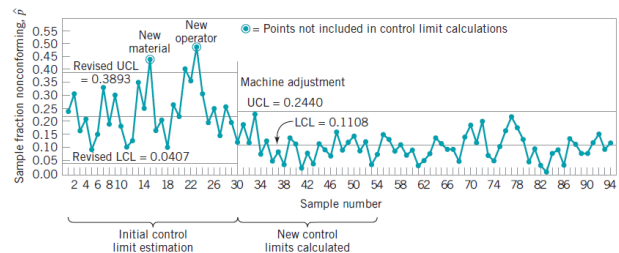


Figure 4. The Example of a Control Chart from Montgomery book

The QEG author *did not* compute the CI! Since, actually, the value 0 belongs to both the CI; therefore, anybody, with the two previous, derives that *the parameters significantly different from 0!!!*

The QEG author *did not realise that* the asymptotic defectiveness derived from those formula is nonsense: Look at the Figure 4, with 40 more samples, taken from the Montgomery book: it shows the nonsense!!!

Do you see how much wrong was the QEG professor?

The referee of the paper did not find the error, as well, because he did not used the *SPQR!*

Remember Juran at Vienna EOQC Conference!

Since *TQM* is a *trusted* journal is evident that Quality of papers stems from the authors and does not stem from the publishers.

Therefore it is not true that only "*Predatory publishing,...*" (from Wikipedia), provide their readers with poor quality papers!!!

3. A second Case of a Non OAP Paper

QEG members have been very active on Process Control; they invented in 1998 the “Qualitometro I method” and in 1999-2000 the “Qualitometro II” and in 2005 QEG members invented the “Qualitometro III method” in the papers related to ^[129].

We cannot give here all the ideas of the QEG members; the interested readers can see various author’s papers ^[73-79, 86-95, 87, 99-101]

We consider very interesting to draw the readers’ attention on the fact that some Turin Politecnico students, L. Perri (2002), E. Mori (2006) and J. Baucino (2008) found the drawbacks of fuzzy sets in control charts. Using the Scientific Approach they could find that the wrong “control Charts” provide at least 20% out of control events for random data “uniformly distributed” on the scale points: such data “uniformly distributed” must be “in control” by definition!!! ^[73-79, 86-95, 87, 99-101]

Clearly, fuzzy sets in control charts are wrong in the way they are used in applications to Quality. [see References]

It is important to mention that those wrong ideas were copied [see Figure 1] from ^[130].

Those *trusted* journals are surely NOAP.

Nevertheless they put out wrong papers.

It is natural that those (authors) professors teach wrong ideas to their students. ^[126]

The findings of F. Galetto are opposite to what it can be found in the web about OAJ as “means for tricking people” (asking fees for publishing papers).

It is very clear that the bad quality happens for “*well reputed and trusted magazines and journals*”, as well. See ^[from 85 to 95, 126]

4. A third case of a NOAP paper

In the introduction we mentioned a DoE about which the QEG authors (M. Galetto, et al.) hyped their “effective” methods; it is found in the paper ^[127]. Surely, that journal is not OAP! The data are in Table 1: it is a full design 3³ (3 factors at 3 levels each); the response is the Hardness. The QEG authors, using Minitab 17, make all the computations and find the optimum setting in the Excerpt 1.

Their optimum response is Hardness=122.45 HB; the authors compute the 95% Confidence Interval of the optimum: CI=118.08-----126.83; if one looks at Table 1, without any use of Minitab, he can see the maximum 121.0, at run 6.

Run	P(W)	V(mm/s)	hd(mm)	ψ(J/mm3)	Hardness(HB)	Test no.	Level	level	level
6	340	1300	0.19	45.88	121.0	6	1	2	3
7	340	1700	0.11	60.61	120.3	7	1	3	1
8	340	1700	0.15	44.44	118.7	8	1	3	2
9	340	1700	0.19	35.09	119.7	9	1	3	3
15	355	1300	0.19	47.91	119.7	15	2	2	3
17	355	1700	0.15	46.41	118.7	17	2	3	2
24	370	1300	0.19	49.93	118.3	24	3	2	3
25	370	1700	0.11	65.95	120.3	25	3	3	1

We do not know if the runs were carried out in the standard order or in random order; we can analyse the data “in a Control Chart way” obtaining the Figure 5

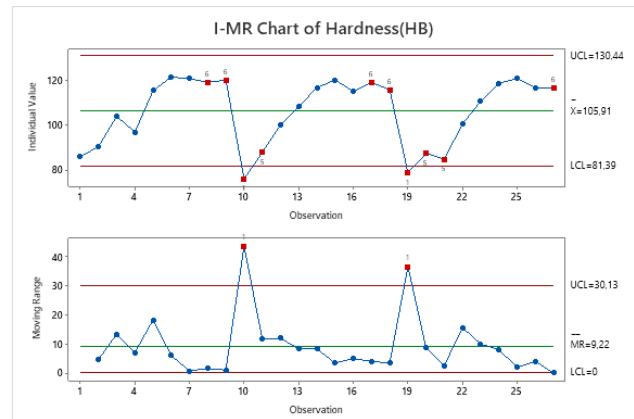


Figure 5. Analysis of the data of Table 1 (Control Chart)

The “Control Chart” (assuming that the data were Normally Distributed, as done by the paper authors) shows pictorially the runs (that you see in the previous table) were the response is near the optimum.

If the problem were to find the optimum, anybody could find it only by looking at the maximum of Hardness, because the Design is a Full Factorial.

On the contrary, the authors were forced to assume that the data were Normally Distributed, before making any calculation.

From Figure 6, we see clearly that the Distribution is not Normal.

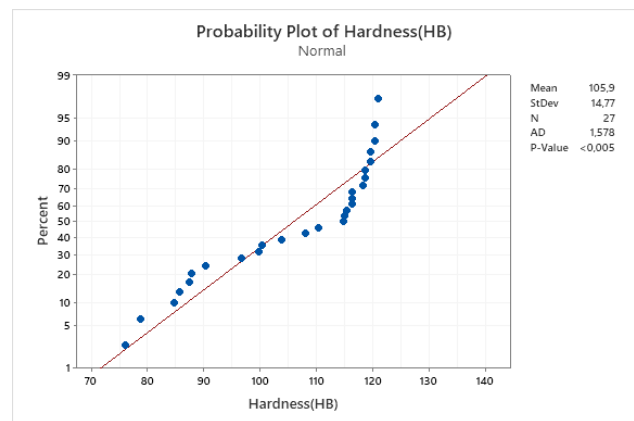


Figure 6. Distribution of Hardness (data in table 1): it is not Normal

Therefore, one cannot apply the Least Square Method

(either of ANOVA, or of RSM).

In spite of that, the paper authors found the function

$$HB = \beta_0 + \beta_1 \cdot P + \beta_2 \cdot v + \beta_3 \cdot h_d + \beta_4 \cdot v^2 + \beta_5 \cdot v \cdot h_d$$

Excerpt 2 (from [127])

From that, they found the optimum 6mod in the following table.

Run	P(W)	V(mm/s)	hd(mm)	$\psi(J/mm^3)$	Hardness(HB)	Test no.	Level	level	level
6	340	1300	0.19	45.88	121.0	6	1	2	3
6mod	340	1538.4	0.19	38.78	122.45				

Notice that P and hd are at the same level; only V is “almost in the middle” between 1300 and 1700.

From the analysis it turns out that that Hardness values 121.0 and 122.45 are NOT significantly different with $\alpha=5\%$.

If one had used the G-Method [41, 50, 52, 55, 57, 60, 62, 67, 69, 73, 81, 85, 94-95, 99-101, 104, 109-112] and not Minitab, he would have found a better equation (using the same symbols of Excerpt 1...)

$$HB = \beta_0 + \beta_1 P + \beta_2 v + \beta_3 h_d + \beta_4 v^2 + \beta_5 v h_d + \beta_6 P v + \beta_7 P v^2 + \beta_8 P^2 v^2 + \beta_9 P h_d + \beta_{10} v h_d$$

This equation is also confirmed by the interaction plot of Figure 7

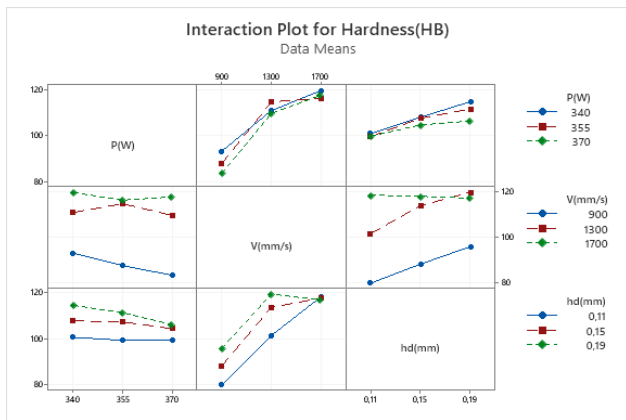


Figure 7. Interactions between the factors (data in Table 1): Normal distribution NOT needed

Again we see that a NOAP journal “International Journal of Precision Engineering and Manufacturing” (fee not asked for publication) publishes papers with some problems: methods used that did not respect the assumption of the methods, conclusions drawn that did not consider the Confidence Intervals (CI), regression equations with cut coefficients, interactions not completely considered, ...; to act correctly those authors should have transformed the data to get “normality” or to find the Theory for NONnormal data.

Transforming the data of Table 1 into “Normally distributed data” (using the Johnson transformation), we can find the following chart: it is clearly seen that run 6 pro-

vides the optimum setting (maximum response).

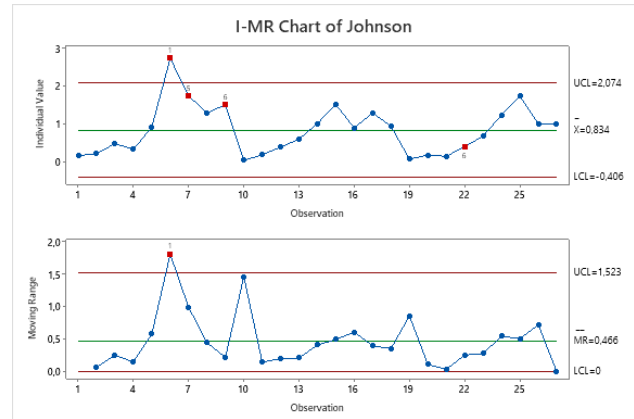


Figure 8. Control Chart versus Runs: data transformed to Normal

5. Control Charts with Exponentially Distributed Data. MINITAB Wrong

This author posted a question at site iSixSigma [113] related to control charts: “control-charts-non-normal-distribution” asking for the “solution to two cases shown in a file”.

Both were related to the problem of finding if the process is In Control (IC) or Out Of Control (OOC); the solution of the two cases depend on the distribution of the data. the first case can be found in the book of D. C. Montgomery, with *data following the exponential distribution*; Montgomery dealt it wrongly in all the editions of the book, after 1996.

His solution was wrong and still it is because he, with his methods, decides that the process IC, when actually it is OOC; the “experts” of site iSixSigma [113] did not wanted to consider the truth (process Out Of Control) and challenged F. Galetto about writing a “good” paper to be “Peer Reviewed” and, only later, to be published in a “Well-known Journal”. They did not believe the authors “scientific” ideas.

One participant at the discussion suggested the Minitab Software for analysing the data as “rare events” (according to him, T Charts were the good method to use).

Analysing Minitab “T Charts” it came out that they were wrong.

At that stage, the author posted the information and emailed Minitab Inc. asking the theory of the wrong T Charts.

The author and Minitab exchanged several e-mails; the conclusion (for MINITAB19) was:

From MINITAB:

1. There was no free technical support for the theory of

the T charts,

2. and they suggested me to consult a statistician
3. or to pay their Statistical Consulting service. (pay for a Wrong Method!!!)

The author replied that they had to keep their *WRONG method*, and to sell it, *WITH ERRORS*, to their Customers, let them to "TAKE WRONG DECISIONS".

Notice that Minitab20 has still the same problem: December 16 2020. See Figure 1.

F. Galetto was asked to read the paper of Joel Smith [114].

Unfortunately, Control Limits provided by that "Peer Reviewed" paper, whose authors worked with Minitab Inc. are wrong.

The truth was rejected at iSixSigma [113] post.

A new challenge arouse for the author.

To understand the matter, the reader is asked to get the basics about the Shewhart Control Charts and the Individual Control Charts [7, 8] and the Reliability Integral Theory (RIT) [102-108] which allows to find the correct control limits of charts with exponentially distributed data; RIT was devised by the author in 1975 (45 years ago) well before the T Charts invention.

Incompetent professionals diffuse wrong ideas: Ignorance is flooding and overflowing!!!

We consider the Example 7.6 in the Montgomery book 7th edition. The data (named *lifetime*), in the Table 3, follow the exponential distribution; (we used Minitab 19 to show the problems):

Table 3. Lifetimes [from the Montgomery book]

286	948	536	124	816	729	4	143	431	8
2837	596	81	227	603	492	1199	1214	2831	96

Since the data are few (20) and exponentially distributed one cannot use the usual formulae based on the Normal distribution. If one would [wrongly] do use formulae he would find the following Figure 9.

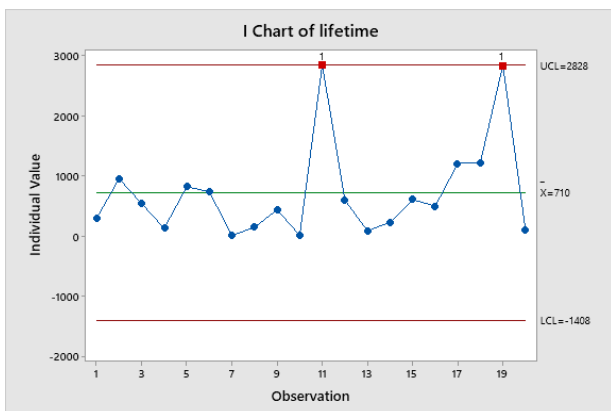


Figure 9. Individual chart of Montgomery data. Minitab 19 used.

Montgomery, copying from Nelson, decided to transform the data from the Exponential distribution to the Weibull distribution and considered the transformed data as Normally distributed; so he used the usual formulae for the control limits (Figure 10):

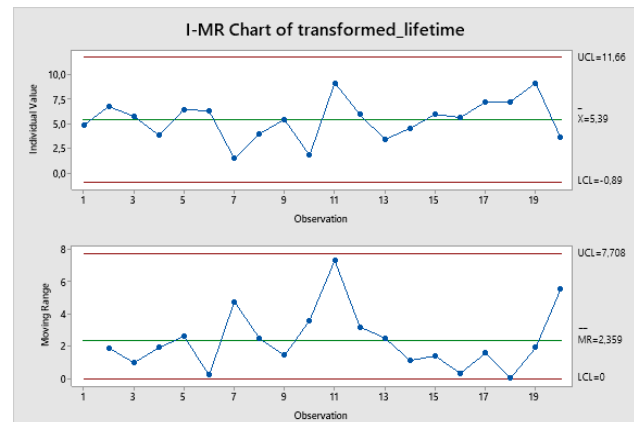


Figure 10. Individual and Moving Range chart of "transformed" Montgomery data. Minitab 19 used (F. Galetto).

From Figure 10, Professor Montgomery decided that the Process was IC: actually, with the right method, the Process is OOC.

The same type of error is provided by MINITAB, with its T Charts. Another wrong method, publicized by E. Santiago, J. Smith in their wrong paper [114].

Quality Engineering has "Peer Reviewed" papers and is a trusted Journal, not asking any fee to the authors, but publishes wrong papers...

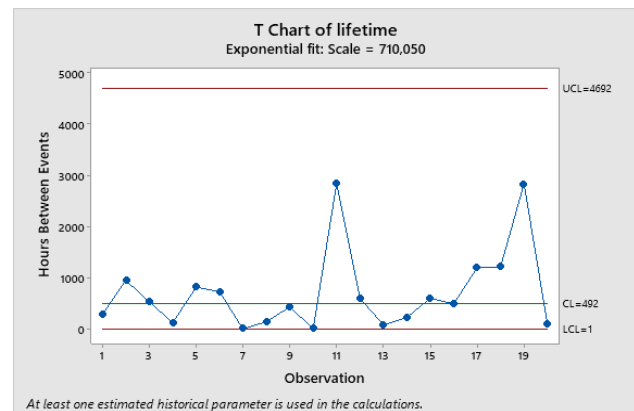


Figure 11. Montgomery data. (T Chart by Minitab 19 used by F. Galetto) (same with Minitab 20, 16 December 2020).

Notice the qualifications of the authors.

E. Santiago, a technical training specialist and J. Smith, a statistician, are working at Minitab; both have good qualifications. Their paper was Peer Reviewed and ended with thanks to *W. H. Woodall* (for his help to improve the paper) and *two anonymous referees* (for their comments to

improve the paper).

So this is the situation we are confronted with: qualified authors, one qualified reader (*Dr. Woodall*), qualified Referees and several other qualified readers.

None of them found that the paper *has WRONG Formulae for the Control Limits!*

These “*wrong formulae are used by Minitab*”, as well!

The authors did not pay any APC (Article Processing Charge) to a “*Predatory Journal*” ...

Their paper is NO good!

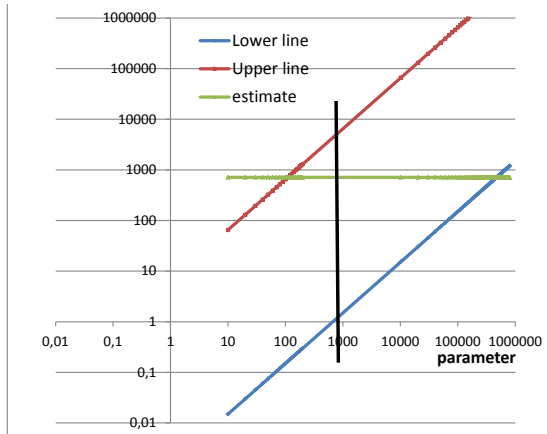


Figure 12. Control Limits for the T Chart of Montgomery data, using RIT(F. Galetto).

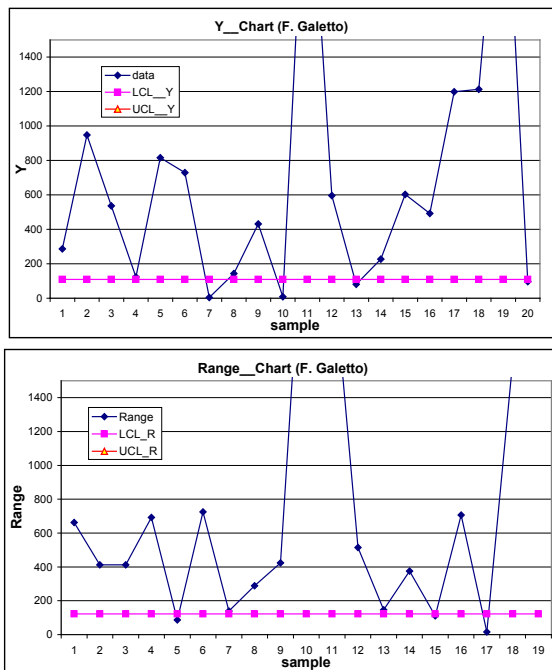


Figure 13. Control Limits for the T Charts of Montgomery data and for the Ranges, using RIT(F. Galetto).

Using RIT [102-108], anybody can find the “Process is Out Of Control” (Figures 12-13). The green horizontal line (in Figure 12 with logarithmic scales) intercepts the ordinate

axis at the Mean of the data; the abscissas of the points of interceptions of the green horizontal line with the Upper and Lower lines are the Lower and Upper Control Limits of the T Chart.

Moreover the Ranges are “Out Of Control”: they too are Exponentially distributed (see Figure 13)! [104, 105]

In the Figure 13 the points (data) below the Lower Control Limit indicate “*Process Out Of Control!*”!

Other reputed authors Kittlitz, Schilling, Nelson, Woodall, Xie, Goh, Kuralmani, Ranjan, Zhang, published in other trusted Journals and *made the same errors* [115-123]: *Journal of Quality Technology, Kluwer Academic Publisher, Reliability Engineering & System Safety, chapter 16 in the book Engineering Statistics (Pham Editor): Springer-Verlag, International Journal of Production Research, IIE Transactions, Computers and Industrial Engineering.*

Reader, what is your honest conclusion?

6. Estimation from Incomplete Samples

Often, in the Reliability Test (and field), we have “INCOMPLETE samples” of data: we have time to failure data and data (named *suspensions*) related to NON_failed items.

RIT provides the solution for estimating the MTTF, the failure rate, the Reliability, ...

This problem of estimation from “INCOMPLETE samples” is GENERALLY not considered by statisticians and is not dealt in the Statistics books; they consider only the “COMPLETE samples” and they do not say that their formulae hold only for those type of samples (in the reliability field, all the data refer to failures).

Unfortunately, EVEN THOUGH they teach Reliability, many and many professors are not really experts in the Reliability Theory.

See the following exam exercise that has been given several times, by the author, to his student: 3 incompetent [Italian] authors wrote a reliability book written from which the case was taken: the reliability data (time to failure) of the test are assumed NORMALLY distributed!!!! [Macchina di prova stands for item on test, Tempo al guasto (ore) stands for Time To Failure (hours)]. 40 TTF were collected (sample complete: all the items failed). The authors (professors) say (in Italian)

vate al gusto dell'unità. Qualora alcune unità non arrivassero al guasto non è possibile considerare tale dato. Questo genera dei dati che non possono essere considerati ma che comunque generano dei costi di sperimentazione. *JANW USA*

[translation: If some of items do not fail it is not possible to use that datum. This generates data that cannot be considered but that in any case generate experimental costs]

The THREE SUPER incompetent professors are highly rated in the so called <<<scientific community>>>!!!!!!

Here is the Exam Exercise:

=====Esercizio n. 12 MOLTO ISTRUTTIVO relative ad un libro sull’Affidabilità di 3 BMWisti. Analyse the data of reliability tests THREE incompetent professors say, proving their whole IGNORANCE (they say that if some items do not fail by the end of the test the “suspended items” can NOT be considered in the computations)
YOU suppose that the test is truncated at 400 h: estimate the MTFE, WITHOUT neglecting the “suspended items”. (the data are time to failure: data > 400 must be considered as non failed at 400) BMWisti means

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Tabella 5.1 Esempio di dati rappresentabili con una distribuzione normale.

Macchina di prova	Tempo al guasto (ore)	Macchina di prova	Tempo al guasto (ore)
1	420	12	480
2	360	13	340
3	340	14	300
4	320	15	400
5	240	16	440
6	380	17	360
7	300	18	340
8	200	19	500
9	300	20	220
10	340	21	300
11	280	22	380

$$\mu = 343 \text{ ore}$$

$$\sigma = 77 \text{ ore}$$

Si noti come nelle prove sperimentali si sono considerate solo quelle che siano arrivate al guasto dell’unità. Qualora alcune unità non arrivassero al guasto non è possibile considerare tale dato. Questo genera dei dati che non possono essere considerati ma che comunque generano dei costi di sperimentazione.

BMWisti!

Poor students cheated and deceived by the professors they met and to be met....! YOU are guilty, because you do not use your brain! "Can you be better than the great professorSSSSSS?"

Excerpt 3. (An exam exercise given by Fausto Galetto to his students)

To pass the test the students, obviously, could not be as stupid as those professors! One of the 3 authors was very good (??); you could meet him at the SIX SIGMA lessons: Director of the Master on 6σ! He has excellent qualification: Taguchi Award Winner, MBB, author of 9 books,.. In spite of that, he teaches wrong ideas.

Is this professor able to solve the cases in the sections 4 and 5?

Will all those incompetent professors consider their responsibility to teach scientifically and to satisfy the learning needs of students and of the whole society. See (Figure 1), ...

There is NO Quality in teaching wrong ideas and methods! Teaching has to be scientific (Figure 1).

If those three incompetent profs. had studied the Theory they should have found the books about RIT and then

...

7. SPQR and OAJ versus NOAJ

We proved, and now it should be very clear, that NOAP have the same problems as have OAP: the authors have the primary responsibility of their papers quality; if the Referees are not really competent they are not able to see the errors ^[9-131].

The *fee*, asked by OAP, to authors does not influence their papers quality if they are truly competent. The "reputation of journals and magazines" ^[from 85 to 95, 126] does not assure the quality of the paper published.

See the following Inspection Plan with wrong detection ^[126] (from a QEG article in Research Gate): the authors of the paper write about the defectiveness of items checked in an Inspection Plan: the defectiveness (that obviously is varying because is the realisation of a random variable) has the mean value $E(X)=p\beta$, caused by the wrong detection, where

1. "p is the probability that a product is REALLY defective"
2. "α is the probability that a product, REALLY NON_defective, is WRONGLY detected as defective"
3. "β is the probability that a product, REALLY defective, is WRONGLY detected as NON_defective"

In F. Galetto’s opinion, $E(X)$ cannot be the above formula.

He asked that to the expert scholars in RG: "What do the Research Gate experts think?" *NO answer!*

Those experts have been unable to use Logic SPQR to understand if the "proposed method" is to be applied or it must be refused.

Now it is evident the title of this paper: *Quality of papers stems from authors and Quality of teaching stems from professors.*

The following case is very illuminating: the origin of the *Disquality Vicious Circle "Presumption-Ignorance-Presumption- Ignorance"*(Figure 15, published on 2008 and related to Figure 14).

Some professors of various university organised (2001) a Design Of Experiment Post-Graduate course. F. Galetto decided to attend the course (as an "intelligent pupil") to see what the "*Montgomery fans*" would teach (also a QEG professor was teaching there!). The experience was quite negative :the professors were incapable to teach "scientifically" the subject.

After the author invented the *Disquality Vicious Circle*" and published the paper ^[82] (with G. Pistone, M. P. Rogantin): during the course the two co-authors did not believed what you can find in the books ^[52, 67]. See also ^[109-111].

By presenting several papers in international Conferences ^[34-101, 111], and by writing several books ^[102-110],

the author have been trying to diffuse the idea that decision-making has to be based on Scientific Methods.

See also ^[124, 125, 180], many documents (cases of wrong papers) in *Research Gate* and in *Academia.edu*.

The following case is very illuminating, as well: when the “students were defending their final thesis” (to get their degree in Engineering), Fausto Galetto used to open the written thesis at a “random” page and to ask the “graduating guy” what he meant with some statements found there. 90%-98% of the students did not know how to provide any answer to the questions: moreover, 50%-60% said “*I copied it from the web!*” That was not the biggest problem: it always was astonishing to see that the (Professors) Referees (as well) of the theses did not know the matter/answer themselves! These are *hard facts*, not opinions; the same facts were found by Deming and Gell-Mann..., and Einstein...

8. Conclusions (using SPQR)

We present here some few ideas about Quality. A longer set of them can be found in ^[112].

Professors, Scholars, Researchers and Managers have to stay with STEM (Science, Technology, Engineering and Mathematics), i.e. LOGIC to prevent and avoid DIS-quality! (see the Quality Tetralogy ^[104-112])

There are many methods misleading (e.g. Taguchi Methods, Bayes Methods, ...); so the previous guys must be EDUCATED ON QUALITY.

They should always remember Deming’s statements ^[3] at pages 19, 129, 131; see Figure 1, as well.

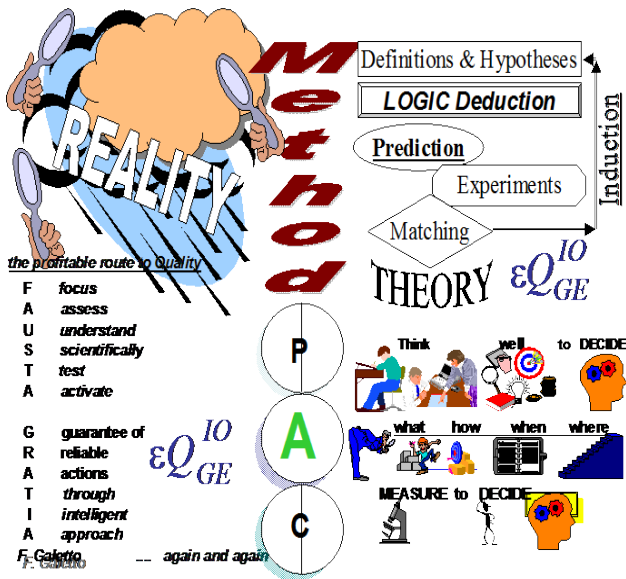


Figure 14. FAUSTA GRATIA for Quality in order to avoid the Disquality.

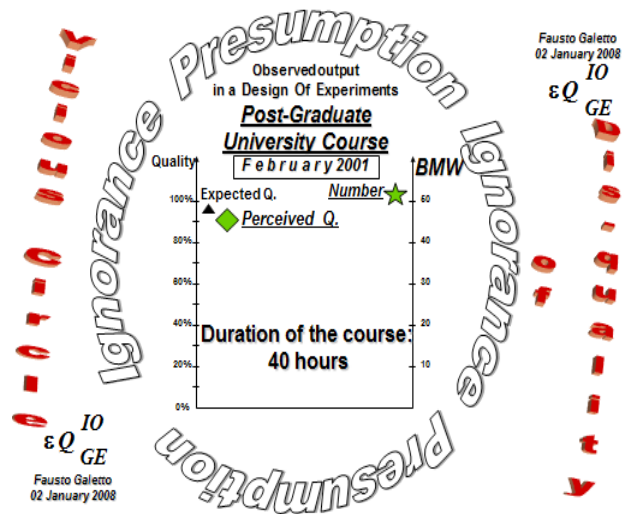


Figure 15. The Disquality Vicious Circle.

The previous guys should think that there are two fundamental principles to use fully the thinking ability of people:

F1 Reality does exist in spite of human beings' willingness and ability to recognize it.

F2 Variation is in everything and everywhere, all the time.

From F2 anybody can derive that «“variation” is NOT the enemy of Quality», as several “intelligent (are they ????)” people [in the 6 Sigma field] say! Variation is in every phenomenon and is important: if life was developing for millions of years that was merit of the VARIATION! The sons of relatives have more problems than the sons of NON_relatives... Biodiversity is the foundation of ecosystems to which human well-being is intimately linked.

These hard facts have been seen by the author during his long experience in the Quality Field, as manager, professor, consultant and scholar.

I. Newton (great scientist) said “*If I have seen farther than others, it is because I have stood on the shoulders of giants*”; he used SPQR, without having invented it; before him Galileo Galilei, another great scientist, used it; after him, A. Einstein did the same.

Knowledge accumulation is a characteristic of the process of Science; the discoveries of one people generation serve for the future ones. This is true for any discipline (e.g. Logic, Mathematics, Physics, Probability, Statistics, Medicine, Economics, Reliability...): any building needs *sound foundations*.

Knowledge and the Knowledge-Making process must have Quality obtained through Quality Tools and Methods, as depicted in the Figures 14, 15, 16 *Quality Tools and Quality Methods to avoid the Disquality*.

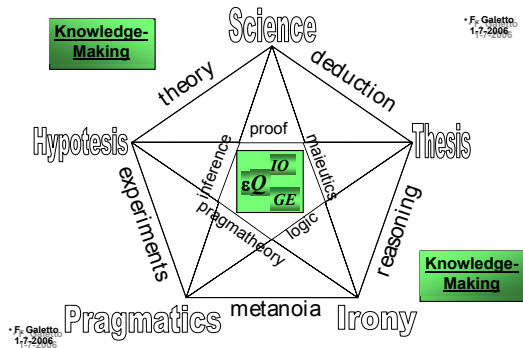


Figure 16. Quality Tools and Quality Methods to avoid the Disquality.

Notice that Quality of papers or books does not depend on their number of citations and a paper cannot be considered “successful” when receiving more citations than those made, as suggested by QEG [an idea of Kosmulski (2011)]; QEG, disregarding completely Figures 14, 15, 16, decided [132] to propose to classify a publication as “successful” when it receives more citations than a specific comparison term (CT). They defined the *success-index* as the number of successful papers, among a group of publications examined, such as those associated to a scientist or a journal. See [126-131] and think if a scholar can be like that...

Paper [97] shows the many drawbacks of this QEG attitude.

Using the SPQR Principle and taking into account that only the Scientific Attitude provides good results, any sensible Scholar can see the drawbacks both of OAP and NOAP: the bad quality of the paper published does not depend on the *fee*, asked by the OAP), but on the very low quality of the *authors* and of the *Peer Reviewers*; the same happens for “well reputed magazines and journals” (NOAP).

Remember Deming, Juran, Gell-Mann, Shewhart [3-8] and A. Einstein

What we said can be extended to book publishers e.g. Wiley & Sons [9-13] and others [133-147] versus [102-110].

We think that all the relevant concept about Quality are embodied in the following two figures (17 and 18).

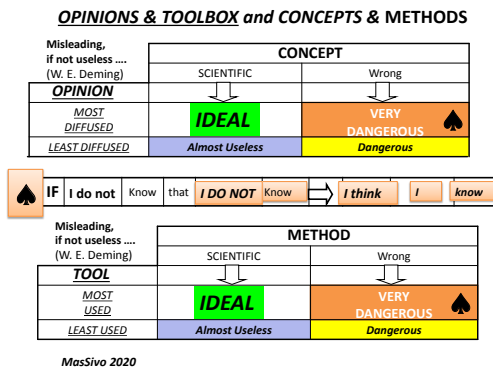


Figure 17. Opinions&Tool-box and Concepts&Methods



Figure 18. The epsilonQuality (εQ) to Teach Quality (Qualitatem Docere) with Intellectual hOnesty (IO) and Gedanken Experimente (GE)

εQ conveys the idea that Quality must be considered in every place, every activity and every time with IO and GE (ideas of Galilei and Einstein). Quality is very much related to sound concepts and Methods.

Every scholar must change his mind (μετανοια, metanoia is a word of Deming) to devise good methods (με'θοδος) as in the following permanent sequence

⇒ μετανοια ⇒ με'θοδος ⇒ μετανοια ⇒

⇒ με'θοδος ⇒ μετανοια ⇒ με'θοδος ⇒

Why professors do not follow it?

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Biography

Fausto Galetto (born Italy 1942) received Electronics Engineering (1967) and Mathematics degrees (1973) from Bologna University; from 1992 to 2012 he was Professor of "Industrial Quality Management" at Politecnico of Turin; from 1998 to 2001 he was Chairman of the Working Committee "AICQ-Università" (AICQ) for Quality in Courses about Quality in Universities.

He wrote nine books and more than 200 papers on Reliability, Quality (Management, DOE, Applied Statistics, Testing, Process Control).

Reliability Engineer with General Electric, 2 years, before the 6σ [*6Sigma*]/movement), from 1975 to 1982 Reliability Manager (Fiat Auto, now FCA); Quality Dept. Director (comprising the Reliability, Production Quality Control, and After Sales Department) with Philco Italiana for 3 years. 1985-1990 Director of the Quality/Reliability Dept. at Iveco-Fiat, since 1990 Quality Management consultant. Lecturer with the Italian Organisation for Quality Control (AICQ) and with COREP(1980-2012).

Co-ordinator of: Reliability Working Group of CUNA (until 1989), Scientific and Technical Committee of QUALITAL (1989), Vice-Chairman of Automotive Sector of AICQ (1985-1990).

He left the SIS (Italian Statistical Society) and the AICQ (Italian Association for Quality) due to the ignorance and loss of commitment of their fellows and "Managers" about the Scientific Approach to Quality and to the related Quality Methods (Statistical and not...)

It seems he is one of the very few who take care of "*Quality of Quality Methods used for making Quality*".