



[Pollen learning lab][®] to improve the public education system (new)

Designing the future from within

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Objetive:

[Pollen learning lab][®] is a methodology, which is sustained upon the system dynamics and the systemic thought to envision sustainable policies to improve the academic performance of the public educational systems for countries worldwide.

To achieve this, given the results of public education in the world, we have taken the first steps to develop a new learning lab that helps us to visualize the impact of our decisions to improve the education system, and avoid the possible, the impact of the unintended consequences of changes in public education policy to be implemented in social, cultural, economic and ecological.

This methodology can be applicable to improve the performance of a school, a district, the education of a state or country, the learning process and generated knowledge which can be extended as well to the business field in an easy way.

Keyword - Learning Lab, Social Sciences, simulation, modeling, public policy, education, system dynamics.

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Introduction




GRUPO SINAPSYS
 [Organización que Aprende]®
[POLLEN learning lab]®
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MODEL TO IMPROVE EDUCATION

By Pedro Dagoberto Almaguer Prado

Following we introduce our methodology called **[Pollen learning lab]®** which is backed on the system dynamic and the systemic thought to help the public education systems in the world and above all to avoid within what is possible the impact of the unintended consequence which is involved in any change in the management of any time of system.

This methodology may be applied to handle the best manner of academic and administrative performance in a school, district, in a city, state or country and can also be applied to better the results in a corporation.

Donella Meadows in her article on how to discover better leverage points to find the best solutions to manage the adequate way in a system to get sustainable results, tell us that the best leverage are found in the social dimension that has to do with the design and goals and above all with the chance of paradigms- therefore our methodology shows the social dimension with indicators by which we can follow through to deep changes in human behavior to obtain better signs of emotional involvements besides a clear function of the social and emotional intelligences guiding the learning and betterment of academic result in school or institution.

In our world, investigation in neuroscience and technological advances in the last decades have supplied sufficient scientific evidences of the importance existing the emotional engagement in the peoples performance and of any key indicator in the academic and

administrative field and know more than before has shown the connections existing in the proper management of emotional and social competency in the performance and learning of the pupil.

There are ten main key elements in this history, which are mentioned as follows:

1. How to manage the best form of the leadership style employed by the principal of the school and any other person in charge of a directive position and how this is linked with the performance and the improvement of the emotional engagement of the teacher.
2. What to do to manage the best way of the emotional engagement for the teacher and what is the link that exists with the performance in the involvement of the learner and his development.
3. How to improve the indexes of the emotional involvement of the learners, and how this is connected with the engaged teacher, with the learning process and its direct performance in the performance of the learner.
4. The connection existing between the engaged learners and learning process.
5. The manner in which the learning process exerts its influence with the academic performance, and above all discovering how the thinking process, learning and communication work together to shape the reinforcement a back-feeding action. As a result the development of skills in any of these processes individual level, helps facilitate abilities in all three.
6. The human sigma, is the application of methods employed in the six Sigma management for technical processes and businesses used now to effect with quality the human approach and relations.
7. The best way to practice the learning that comes out the auto-reflection from the learning inspired by others that conveys the communication process and the learning produced by the connection with the real world (from reading to doing).
8. The longitudinal studies and the statistical analyses focused to discover what really improved and the opportunities areas in the process of:
 - a. The engagement act of “facilitator” teacher.
 - b. The engagement of the “learner”.
 - c. The improvement of our emotional and social intelligent competences.
 - d. Find out the efficacy effected by the leadership, to discover in time what emotional and social competences have an opportunities area and must be improved in the leader and later scientifically speaking, the transformation of the leadership style of the directors and bosses.
 - e. These statistical analyses are useful to enhance what worked and know with precision what did not – to act timely to correct the method.
9. The betterment of the selections processes and the development of the skills and abilities of employees and leaders through the nature of the job position based upon the emotional and social intelligence and the engagement level of the best employees.
10. Develop an innovative strategy of value that is compatible with the community and with the institution’s vision that is in tune with the personal vision of the employees.

Finally it is of prime importance the development of learning communities and the use of an educative pattern centered on the systemic constructivist.

Designing the future



Learning model – follow this path.

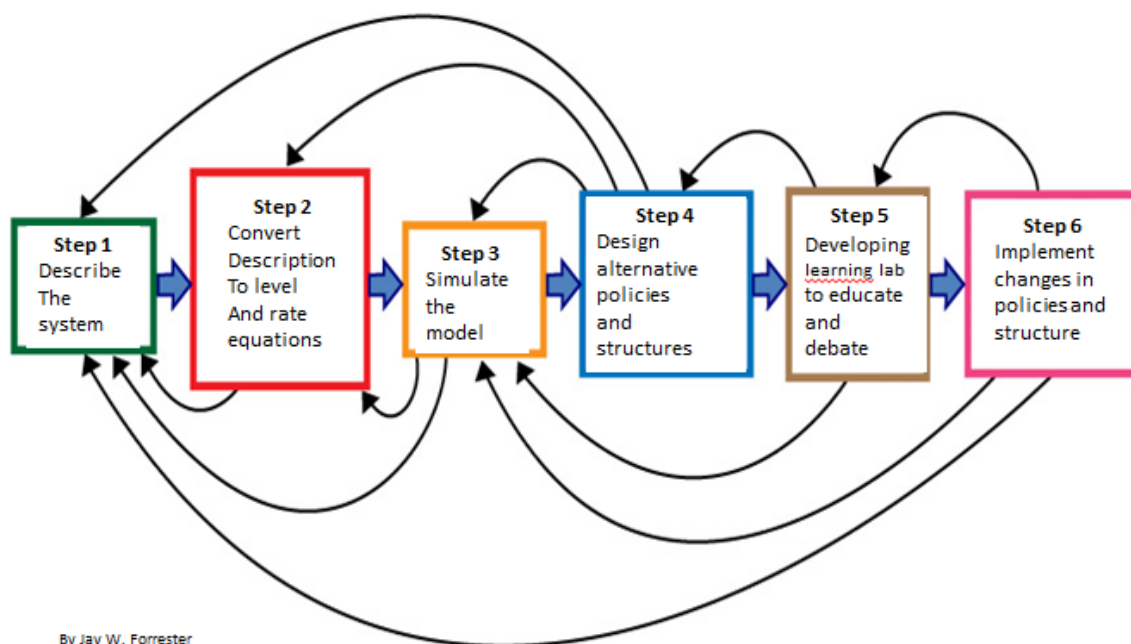


Illustration 1: Steps for the development of learning laboratories and their results.

Building the model, its cycles, cause and effect

Engagement is a Leverage Point for Schools.

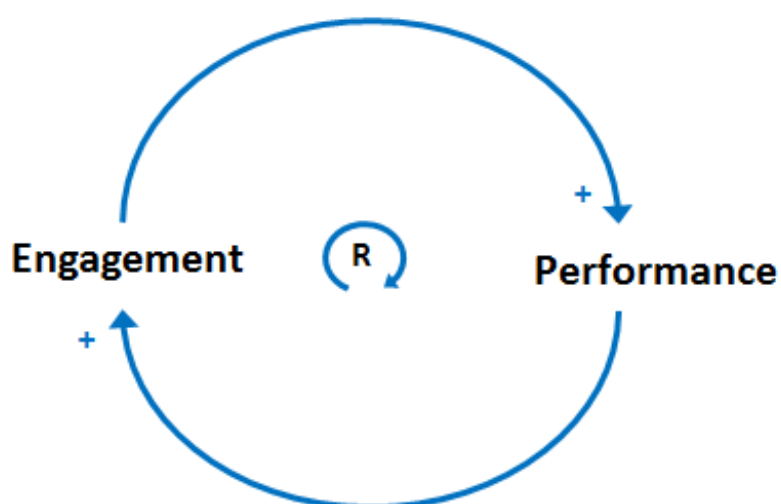


Illustration 2: Is key to the performance, emotional involvement (Engagement).

Schools based on human strengths and DS.

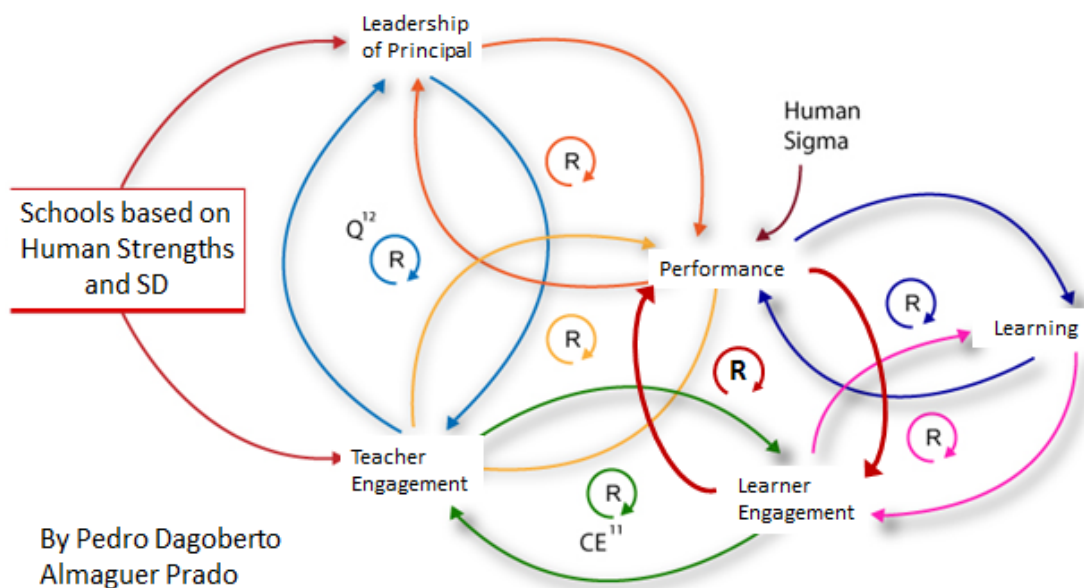


Illustration 3: Cycles of cause and effect of performance in education.

Meta-Analysis of Engagement.

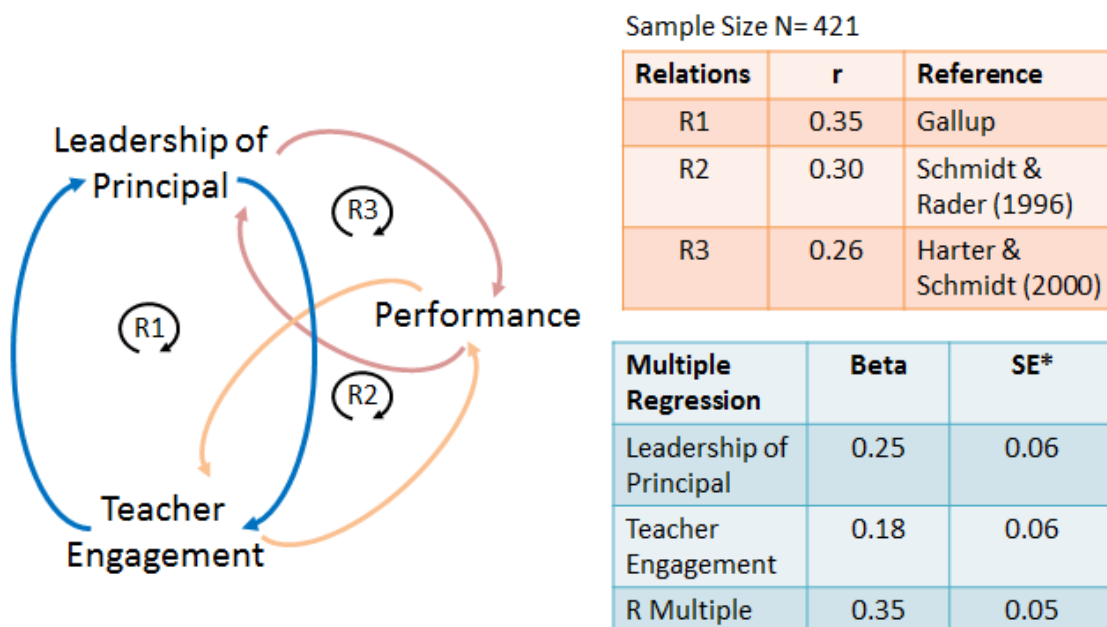


Illustration 4: Meta-analysis of scientific validation of feedback loops R1, R2, R3.

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The cause-effect relationships shown in the diagram above, have been validated and tested in a scientific and statistical results of their meta-analyzes have been published by the Gallup company, www.gallup.com then documented the bibliography where these works have been published.

1. R1, R2, R3, are documented in the book referenced annex as (3) entitled "Follow this path."
2. R1 has been validated extensively in reference (6).
3. To better understand the importance of "HumanSigma," consider the references (4 and 5)

To learn how to develop better leadership style, study references (1, 2 and 8), which are useful to discover their talents and strengthen and references from the books of Daniel Goleman, Richard Boyatzis and the Dalai Lama to better manage of emotional intelligence.

Survey of Teacher engagement Q¹²

In the decade of the 90's, with the support of the neuroscience, the technology and statistical meta-analyses new ways and innovative forms arose to measure the emotional involvement of the employee (Teacher in this case) the Gallup Q¹² quest is one of them --- this we can make use of to measure the lever of the emotional engagement of the teacher and in this way discern with accuracy the causes of the involvement or other opportunities areas to become a top performer employee.

No	Emotional engagement of teachers Q ¹²
0	How satisfied are you with your workplace as a place to work?
1	I know what is expected of me at work?
2	I have the materials and equipment I need to do my work right?
3	At work, I have the opportunity to do what I do best every day?
4	In the last seven days, I have received recognition or praise for doing good work?
5	My supervisor, or someone at work, seems to care about me as a person?
6	There is someone at work who encourages my development?
7	At work, my opinions seem to count?
8	The mission or purpose of my company makes me feel my job is important?
9	My associates or fellow employees are committed to doing quality work?
10	I have a best friend at work?
11	In the last six months, someone at work has talked to me about my progress?
12	This last year, I have had opportunities at work to learn and grow?

Teacher Engagement

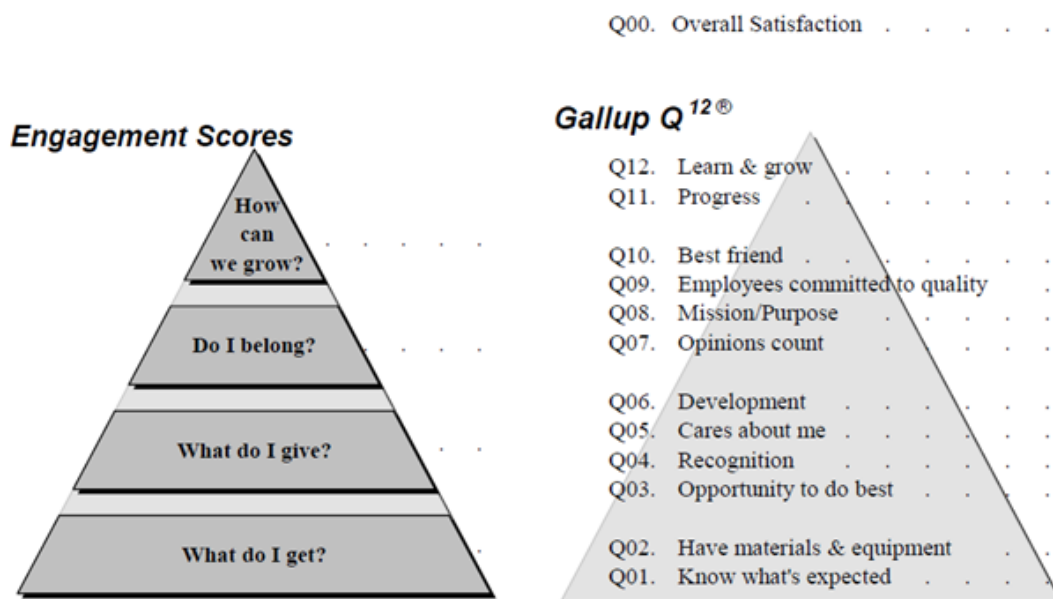
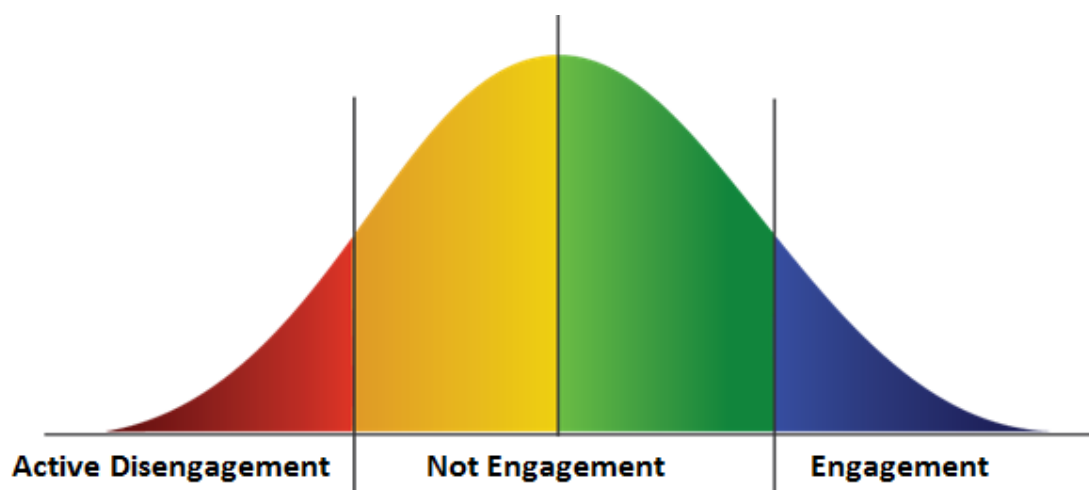


Illustration 5: Psychological Mountain of Engagement

Engagement Classification.



For practical purposes, one can say that employees and students can be classified in three ways:

1. The Engagement, are high performance,
2. The "Not Engagement" are employees who are not psychologically connect with students, if students have an average performance, and
3. The Active Disengagement, these are the ones who disapprove, or low performance.)
The engagement is also known as the "emotional involvement".

Model for Teacher Engagement

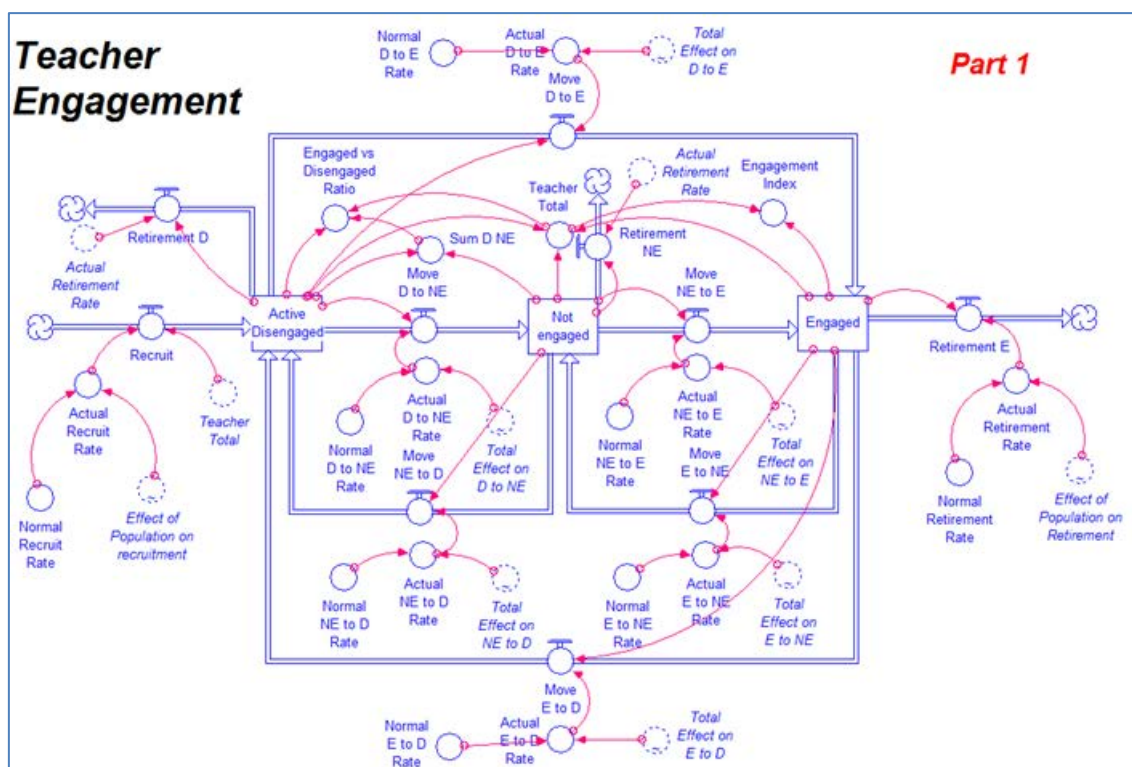


Illustration 6: Module for the Teacher Engagement.

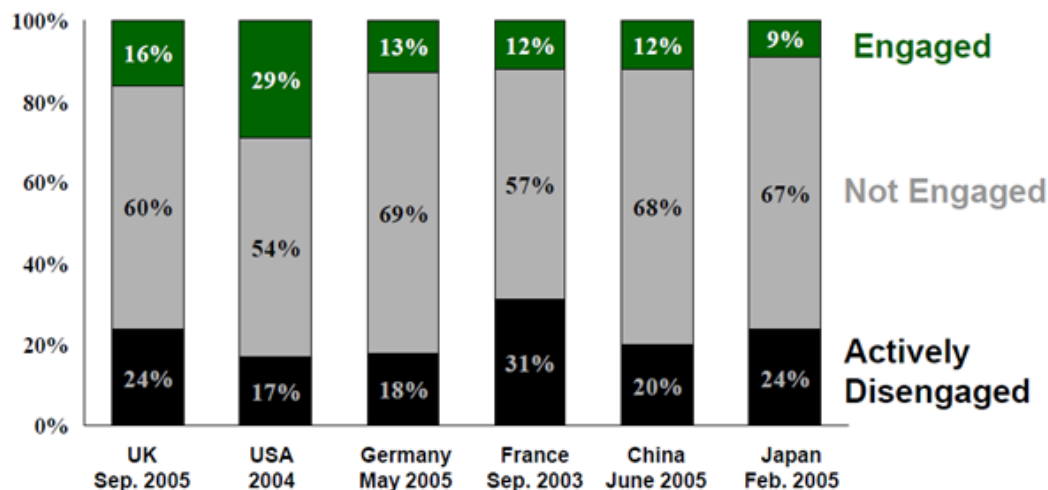
Notes

This is essential to know precisely, which is the degree of emotional involvement of every teacher or employee of the institution, it is important that the leader knows how to interpret the survey Q12 (includes 12 questions) reported in Appendix "B" and above all, known to practice the medicine to solve the problems of low involvement of their teachers, take note that this directly affects the emotional involvement of their students and their performance is directly affected, everything is connected. If you want to understand a little better depth these exciting discoveries in neuroscience, read the book "Follow this path" in reference (3).

The application of "leadership styles of resonant type, the part of managers, but **understanding what** to do to correct problems in the Engagement of their teachers, play a key role in moving from a state of Engagement, to another, for calculating the effect of recruitment and retirement plans are followed guidelines similar to those mentioned in the module for the leadership of its directors.

Engagement index – International comparison

Starting from 2003 the world was acquainted with the first results of the new employee engagement for different countries in the world. This was published by the Wall Street Journal.

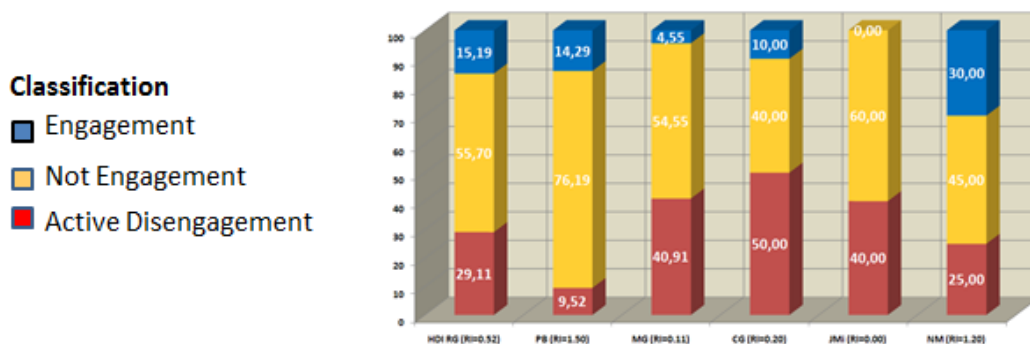


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ENGAGEMENT (BI) (Business Intelligence)

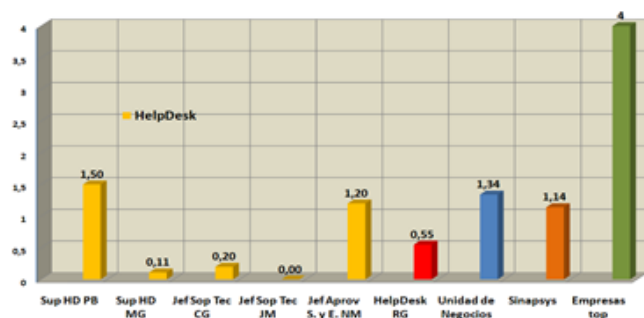
Once the engagement evaluation was conducted with the teachers and employees in the school, it is important to make use of some application to develop business intelligence to calculate the engagement in any level of hierarchical structure.



Classification

- Engagement
- Not Engagement
- Active Disengagement

Ratio of Engagement (RE)



Comparisons	Ratio Engagement
World-class Companies	4.0
Sinapsys (northeastern México)	1.14



Engagement – In detail

In the following graphic in order to discover the areas of opportunities to improve, the items 4,5,6 and 10 show the lowest score levels to reach the 100% aimed; in general, there is an improvement opportunities for all the items – the goal is to attain the 100% maximum score.

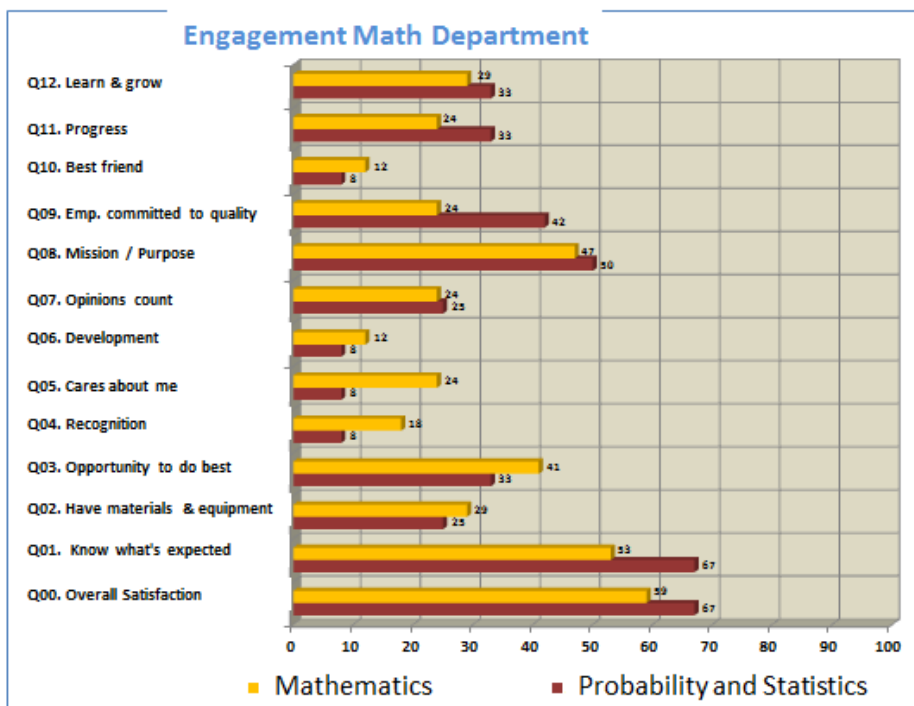


Illustration 7: Comparing results of the engagement in two areas.

Engagement – categorization.

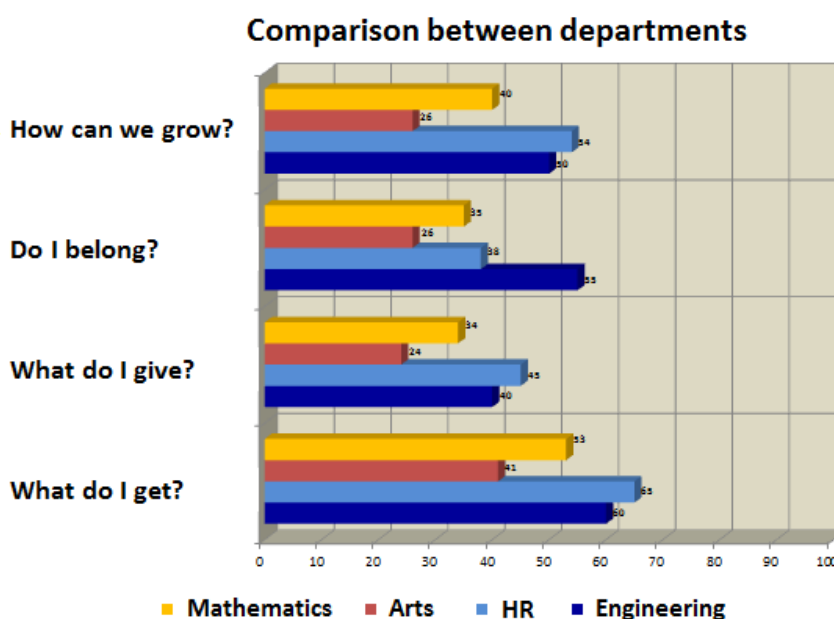


Illustration 8: Engagement by categories, comparing departments.

What to do to improve the engagement

When evaluating for the first time the engagement in any institution, many areas of opportunities are discovered to be improved some of them have to do with the precise results hoped for the job position others with the leadership style of the boss and even others with the vision attunement (the personal vision aligned with the corporation vision) many others with the growth and learning; therefore there is much to be done. The leader must have a clear idea and act immediately mainly with the employees that have been classified as non – involvement actively. Every item has its own list of the instructions to be carried out to improve the scoring this applies both to the administrative, academic and the learners.

Longitudinal Studies of Teacher's Engagement

Longitudinal Studies of Teacher's Engagement	Second Quarter			First Quarter			t-Test	Effect Size	
	N	Mean	SD	N	Mean	SD	Value	Value	
0.- Overall Satisfaction	11	108.64	9.31	18	99.33	18.93	2.71*	1.04	3
1.- Know what's expected	11	53.82	5.77	18	46.83	9.36	2.49*	0.95	3
2.- Have materials & equipment	11	71.64	7.25	18	64.22	11.04	2.18*	0.83	3
3.- Opportunity to do best	11	22.36	3.50	18	21.72	2.28	0.54	0.21	1
4.- Recognition	11	17.82	3.38	18	17.39	3.25	0.34	0.13	0
5.- Cares about me	11	24.73	4.24	18	24.17	3.27	0.38	0.14	0
6.- Development	11	26.55	3.06	18	26.00	6.53	0.30	0.12	0
7.- Opinions count	11	68.64	6.43	18	61.06	11.12	2.33*	0.89	3
8.- Mission / Purpose	11	18.45	5.63	18	17.33	5.61	0.52	0.20	0
9.- Employees committed to quality	11	48.45	5.33	18	44.39	9.80	1.44	0.55	2
10.- Best friend	11	64.73	6.40	18	59.67	11.95	1.48	0.57	2
11.- Progress	11	20.36	3.44	18	18.89	2.96	1.18	0.45	1
12.- Learn & grow	11	44.82	5.62	18	38.78	6.42	2.66*	1.02	3

How to know if things are going in the right direction

The engagement evaluation must be done in a periodic way perhaps every three months to help us in the longitudinal studies to discover the scientific method of what items where tended to with greater efficacy this is taken care of through statistical analysis of the t-Test or evaluating the effect in each line where one or two asterisks are shown this means the this items in particular had a good effect to remedy the failures from the statistical point of view this points to higher statistical trustiness of the 95% which qualifies this change when we notice “*” or 99% when “**” appear if the effect side is used we look for a higher value to 2.

Based upon the previous results we can immediately back feed the leader of the impact of the engagement to improve his team or the unintended consequences or not which causes of a deficiently his emotional an social intelligence so that, there should be continuation of practice to improve his leadership style.

Social Intelligence and the Biology of Leadership have a direct impact on performance.

by Daniel Goleman and Richard Boyatzis

Disonant Leadership	Impact on climate	Resonant Leadership	Impact on climate
Coercive	Strongly negative	Visionary	Most strongly positive
Commanding	Highly negative	Coach	Highly positive
Pacesetting		Democratic	Positive
		Affiliative	Positive

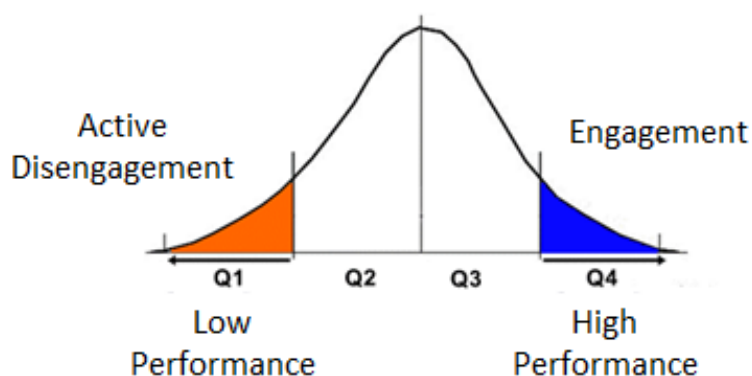


Illustration 9: Resonant & dissonant Leadership, have a direct impact on performance.

According to Daniel Goleman's, [Richard E. Boyatzis](#), [Annie McKee](#), Emotional Intelligence book, references (9,10, 11 and 12), especially the one entitled "Primal leadership," helps us understand a little better, the importance and role transcendent playing all the directors of any area in any institution, when exercising their leadership style, as to the performance of his team.

Daniel tells us that there are two kinds of styles of leadership, positive or so-called resonant leaders, negative or dissonant. Among the resonant are the (visionary, coaching, affiliative, democratic) and are classified as dissonant (the authoritarian or the helmsmen) both exert a negative and highly authoritarian leadership.

Based on assessments of emotional intelligence Goleman and Boyatzis ECI-360 test, you may find the leadership style of each manager, our data indicate that in Northeastern Mexico, abound in more than 75% dissonant leadership style, this means there is much work to do in this area, an authoritarian leader goes to work to sick people a psychosomatic issue, this occurs but not a word to his subordinates, the limbic part of our brain operates wirelessly connects to the human beings around us, so if the leadership style is dissonant, all this negative charge is passed to the members of our team and there is evidence that a relationship in non-nutritious, with the passage of time causes diseases.

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All these considerations have been mapped in this part of the model, there is a group of resonant leaders and other dissonant and the different effects that have direct influence in transforming exercised leadership styles, such as:

1. Effect of recruitment policies that take into account or not, the current state of knowledge of emotional intelligence, knowledge of the talents, systemic skills, the discovery of purpose, mission, vision and values and harmony and alignment with shared vision of the institution.
2. Effect of the formation of emotional and social skills and strengthening of the talents in the transformation of leadership styles in both directions.
3. The effect of policies on retirement plans for succession in the workplace.

Leadership of Principal - Recruitment and selection & training

Emotional & Social Intelligence (Goleman & Boyatzis)	High Performance			Low Performance			t-Test	Effect Size	
	N	Mean	SD	N	Mean	SD	Value	Value	η^2
1.- Emotional self-awareness	11	108.64	9.31	18	99.33	18.93	2.71*	1.04	3
2.- Accurate self-assessment	11	53.82	5.77	18	46.83	9.36	2.49*	0.95	3
3.- Self-confidence	11	71.64	7.25	18	64.22	11.04	2.18*	0.83	3
4.- Self-control	11	22.36	3.50	18	21.72	2.28	0.54	0.21	1
5.- Trustworthiness	11	17.82	3.38	18	17.39	3.25	0.34	0.13	0
6.- Conscientiousness	11	24.73	4.24	18	24.17	3.27	0.38	0.14	0
7.- Adaptability	11	26.55	3.06	18	26.00	6.53	0.30	0.12	0
8.- Achievement drive	11	68.64	6.43	18	61.06	11.12	2.33*	0.89	3
9.- Initiative	11	18.45	5.63	18	17.33	5.61	0.52	0.20	0
10.- Empathy	11	48.45	5.33	18	44.39	9.80	1.44	0.55	2
11.- Service orientation	11	64.73	6.40	18	59.67	11.95	1.48	0.57	2
13.- Developing others	11	20.36	3.44	18	18.89	2.96	1.18	0.45	1
14.- Influence	11	44.82	5.62	18	38.78	6.42	2.66*	1.02	3
15.- Communication	11	17.73	2.34	18	14.89	3.31	2.70*	1.03	3
16.- Conflict management	11	22.36	3.50	18	21.72	2.28	0.54	0.21	1
17.- Leadership	11	45.09	6.80	18	43.06	5.10	0.86	0.33	1
19.- Building bonds	11	54.36	8.66	18	49.06	6.83	1.73	0.66	2
20.- Teamwork & collaboration	11	109.55	7.84	18	98.44	15.27	2.59*	0.99	3

◆ Emotional and Social Competency Inventory (ECI-360) by Daniel Goleman & Richard Boyatzis.

How to discover the job profile

If we compare the emotional competences of the employees classified grouped as engagement (Those belonged to the high to the top performance) against employees classified as active this disengagement (the bottom performers) in a precise way we can visualize which emotional competences made a differences between both groups to enable us to improve the following processes:

1. Human resource selections to discover in a scientific form the emotional and social profile of each job this holds a great value when hiring new personnel.
2. The training and capacitation taking in to consideration the job profile obtained in (1) can be shown which emotional competences can be improve for each employee existing individually. This can be applied to the academic field as well as the administrative.

It is also possible to develop longitudinal studies in the social and emotional competence of any hierarchical organizational institution and so visualize the competency that were really improve and mainly discover those that demand better curricular plan to be strengthened this is of prime importance as we now have the enormous opportunities to improve the curricular in looking over its efficacy of the learning improvement in time.

Model for Leadership of Principal (Resonant or dissonant leadership)

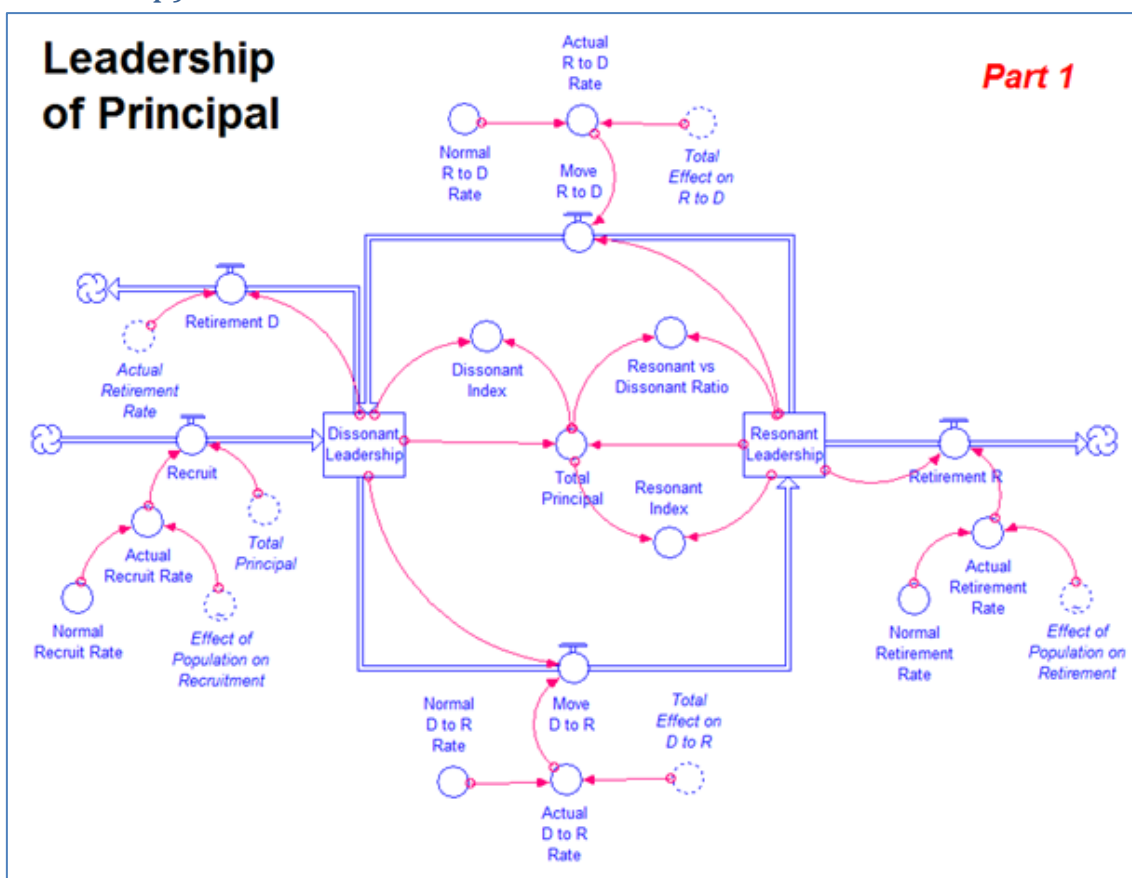


Illustration 10: Leadership of Principal, or any executive position of the institution.

Learner Engagement

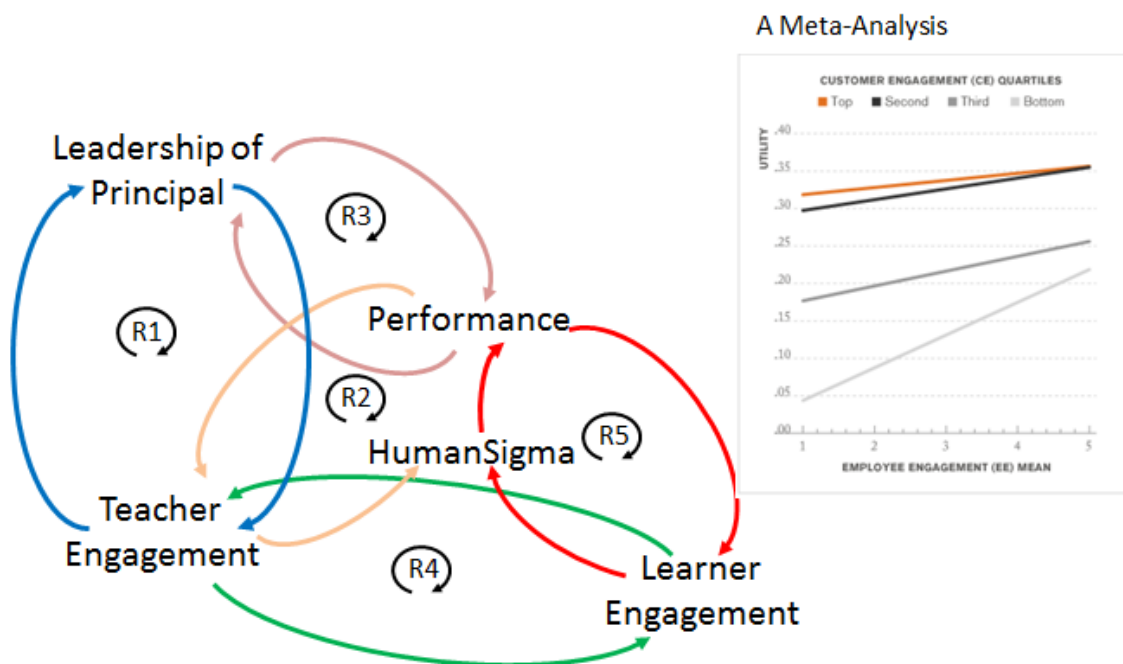


Illustration 11: HumanSigma Meta-Analysis

Learner Engagement (UWES-S)

No	Emotional engagement of Learner (UWES-S)
1	My duties as a student make me feel full of energy
2	I think my career has meaning
3	Time "flies" when I perform my tasks as a student
4	I feel strong and vigorous when I'm studying or <u>i'm</u> going to classes.
5	I am enthusiastic about my career
6	I Forget everything that happens around me when I'm absorbed in my studies
7	My studies new things inspire me
8	When I get up in the morning I feel like going to class or studying
9	I'm happy when I'm doing tasks related to my studies
10	I am proud to make this profession
11	I am immersed in my studies
12	I can continue studying for long periods of time
13	My career is challenging for me
14	I "let go" when I perform my duties as a student

(UWES, UWES-S) - Survey to assess learner engagement.

I recently discovered another yardstick to assess Engagement in the work area, which is being used in several first world countries such as Holland, Spain, Brazil, Portugal, etc.. and also serve to measure the emotional involvement of the employee "teacher", there is also a special version to be applied to the academic context, this means that it is also useful to measure the emotional involvement of the student, this is very relevant since is the first instrument of this type, with its reliability and validity statistics published, besides being translated into several languages including English, Spanish, Portuguese, etc.

- English is known as: **UTRECHT WORK ENGAGEMENT SCALE**
- In Spanish it is called: **Escala de Engagement en el Trabajo de Utrecht**

Or just call:

1. **UWES**: to measure Employee or teachers Engagement of a company or school.
2. **UWES-S**: engagement in the academic context for students.

Emotional involvement of the contact between a learner and a teacher, the learner engagement must pass through four states:

1. **Permanently engagement** - are the learners who are passionate about our institution and are champions of the repurchase of our service.
2. **Engagement** - it's just a lower level of emotional involvement, good learners, with lower performance than those classified as (1).
3. **Not engagement** - these are typical only want a relationship based on the price of our service or products, the value added of our attention, do not care.
4. **Actively disengaged** - these are a danger to the institution, are the lowest performing, speak ill of us and at any opportunity go to the competition..

For practical purposes we have defined only three states of Student Involvement (learners), "Customer" with a similar operation, the module developed for teachers.

Every teacher should be trained in how to better manage the emotional involvement of their students, especially knowing what to do with students not engagement or actively disengaged, these are low-performing students and if the human relationship with their teacher, not improved, will be very difficult to change the course of these young people. Everything is connected, any change in performance, the involvement of employees, or application of the leadership of director, affect positively or negatively on student learning and his performance, and clear And in any other indicator of results you have.

Having evaluated the engagement of students, it is important to follow the evolution punctual improvement process, for this we can use techniques similar to those described in the assessment of emotional involvement of the teacher.

Model for students (learners) engagement

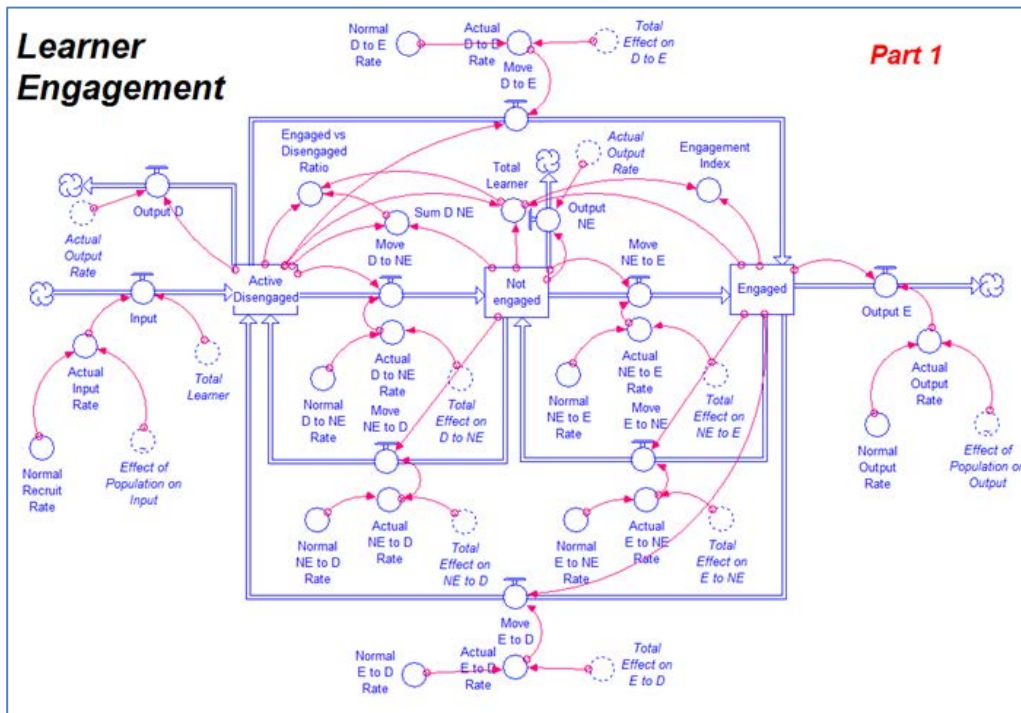


Illustration 12: Module for managing the emotional engagement of the students (learners).

HumanSigma

The HumanSigma is the application of the methods used in the quality management of the six sigma in the technical processes employee in industry applied now to manage with quality the human approach and the relations management.

HumanSigma

Part 1

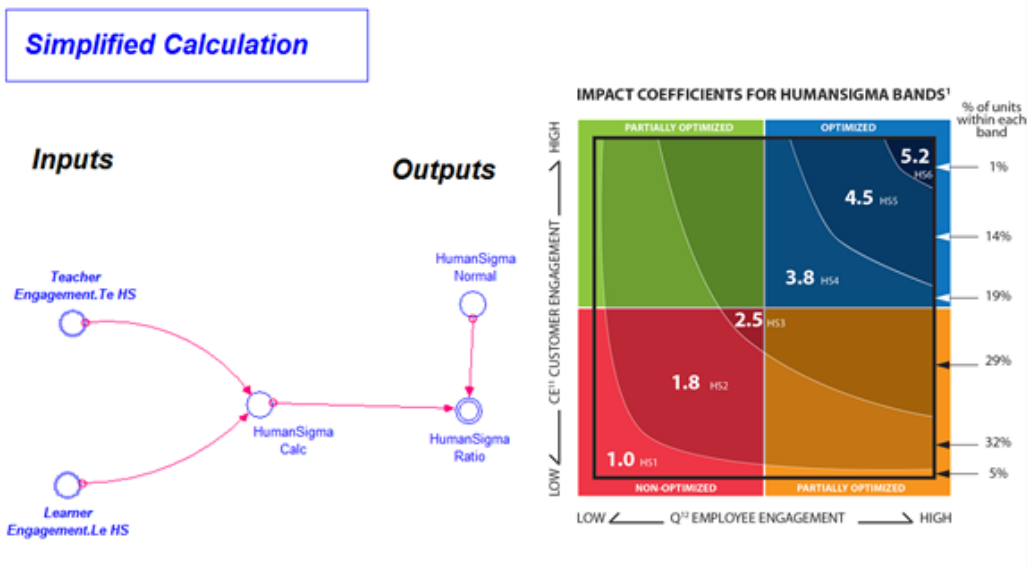
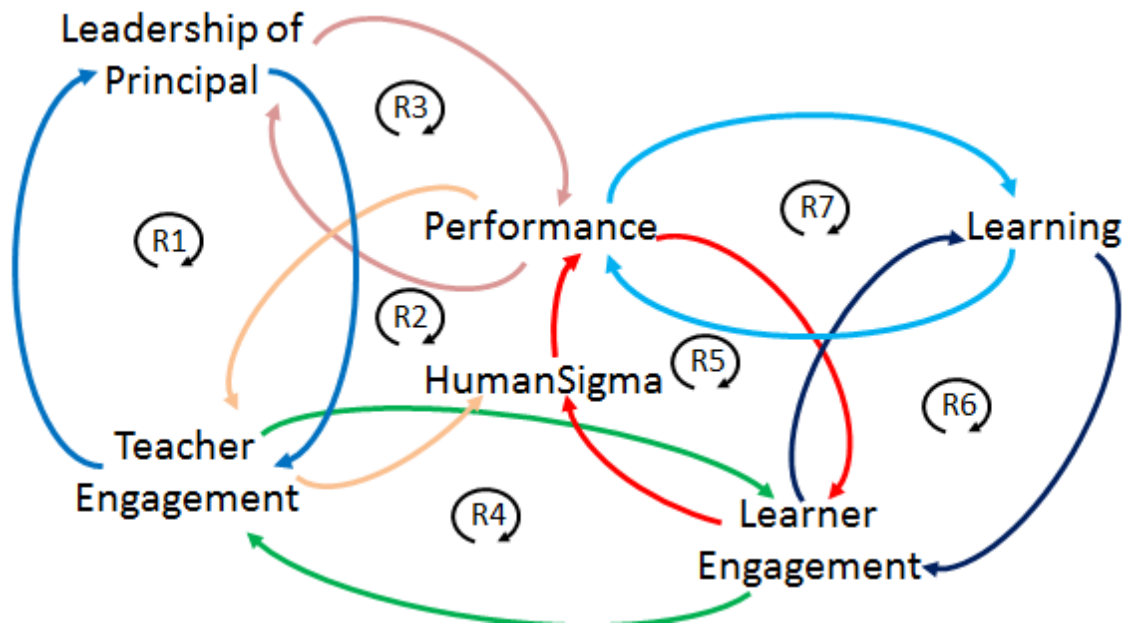


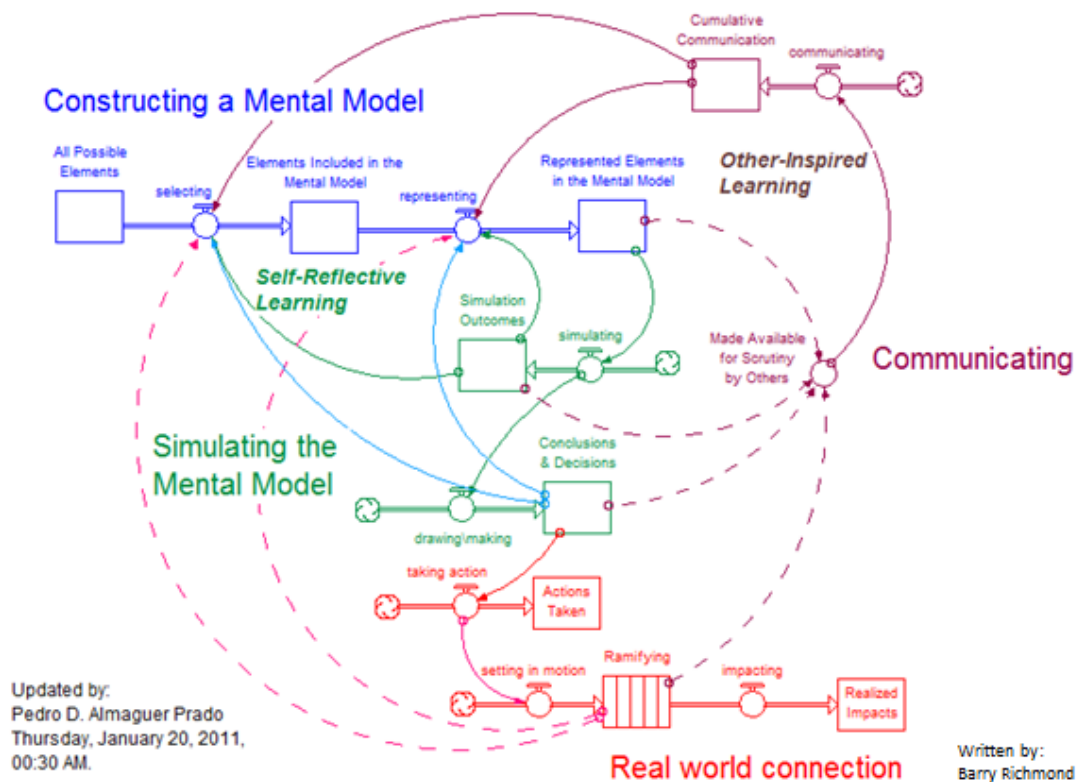
Illustration 13: HumanSigma impact coefficients by bands of performance.

Learning



Model for learning

How to manage the best learning way, which comes of the auto-reflection process of learning inspired by others an learning that connects the communication process, an learning produces by the linking of the real world (Which is derived from reading to doing).



POLLEN - learning lab to improve the public education.

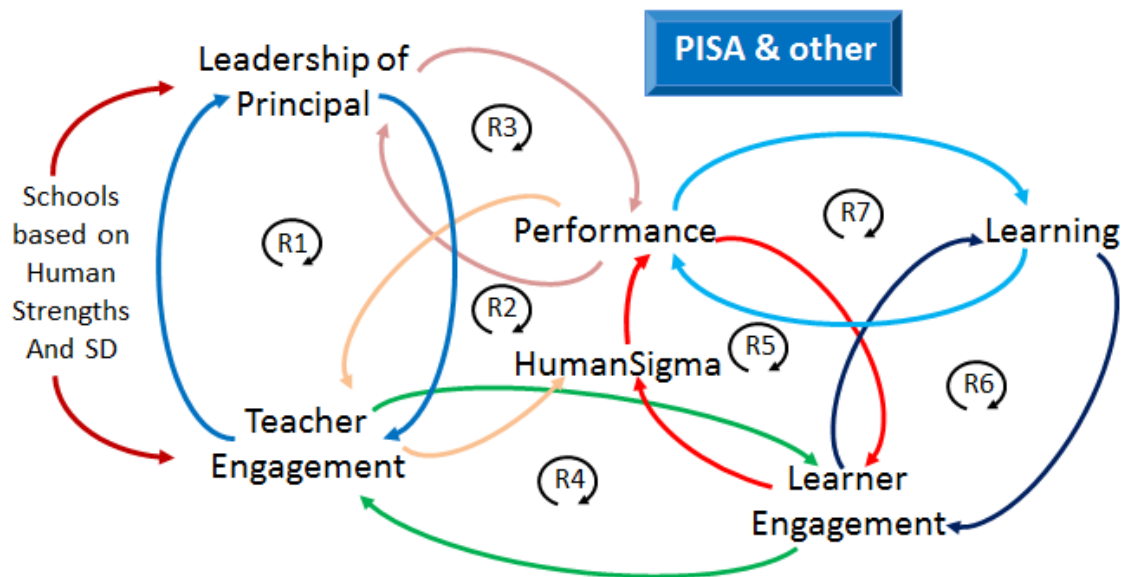
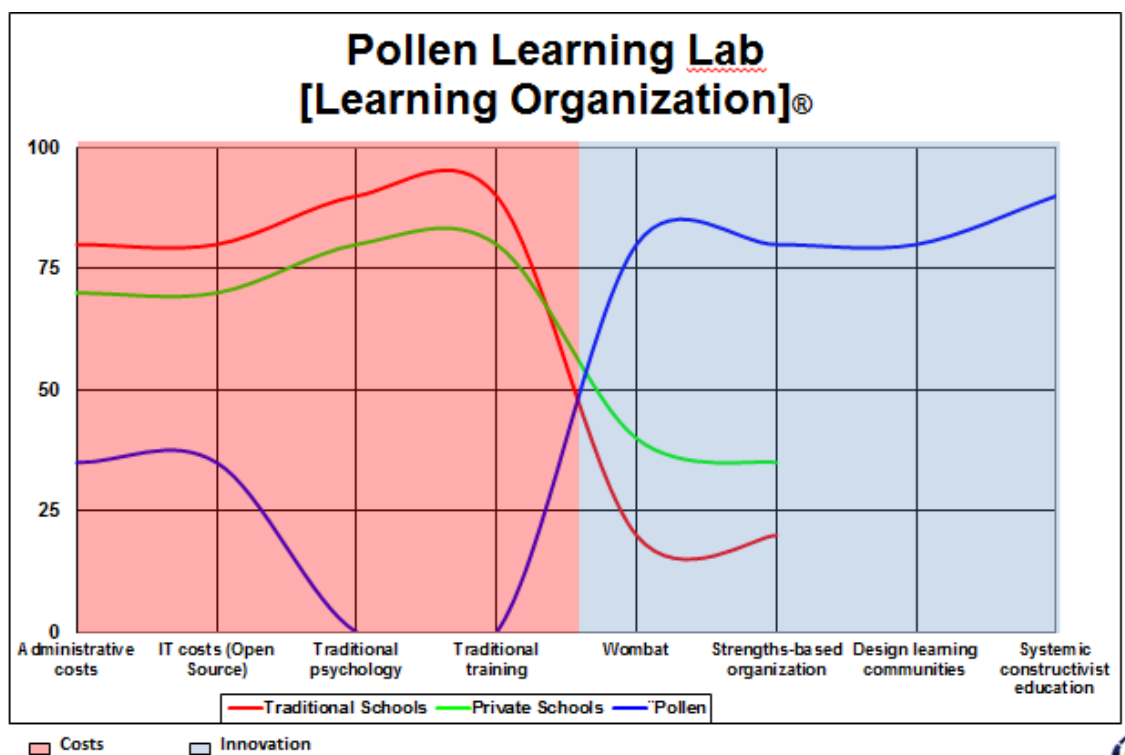


Illustration 14: Pollen to improve the performance of any indicator.

Innovating in value.

Develop an innovation strategic in value, which connects the institution vision with the communities and with attunement of the personal vision of the employees.



Conclusions

1. **Engagement** is a **Leverage Point** for Schools.
2. Develop a strengths-based organization
 - Discover the purpose and personal vision
 - Attunement with the corporate vision
 - Discover the Talents
 - Emotional & social intelligence
 - Gardner's Multiple Intelligences
3. Engagement is a leverage point for schools
 - Teacher engagement
 - Learner engagement
 - Engaging diversity
4. Develop longitudinal studies to discover areas of opportunity in human development.
5. Innovate in value for connecting with the community.
6. Future improvements to the model.

Final Conclusion

Success in our personal and professional development, depends on:

the development of our strengths (talents & emotional and social intelligence).

Daniel Goleman



Emotional and social competencies

Systemic Constructivist Education

Feedback POLLEN model. by professor Richard E. Boyatzis Ph.D.

Pedro,

You have created a fascinating model. We do have data on how when teachers show more EI/SI, the students do better. When principals show more EI/SI, the teachers do better. When Superintendents show more EI/SI, the Principals do better. We have this data from the US, Canada, UK, Tunisia and Turkey. So a multiple level model is appropriate and needed.

I studied systems dynamics from Carl Swanson, Ed Roberts and Alex Pugh (all colleagues and students of Jay Forester who was around MIT at the time, but not teaching any longer). In 1967-1968, David Kolb and I created a systems dynamics model of behavior change! That and being a former aerospace engineer working on rocket ships means that I think in system. So I love your model.

I do believe the ESCI can be very helpful. There have been a number of projects The Hay Group has done in the UK and other countries using it for educational leadership development. I have attached a few recent papers that may be of help.

Good luck in your program,

Richard

Richard E. Boyatzis, Ph.D.

Distinguished University Professor

Professor, Departments of Organizational Behavior, Psychology, and Cognitive Science

H.R. Horvitz Chair of Family Business

Case Western Reserve University


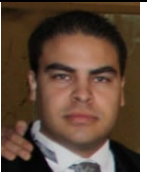
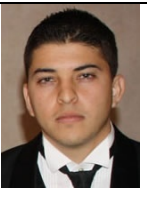

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