GRUPO SINAPSYS

[Organización que Aprende]®

**POLLEN learning lab
to improve the public education system
and PISA.**

*The 30th International Conference of
the System Dynamics Society,
St. Gallen, Switzerland
Jul 23, 2012*

MODEL TO IMPROVE EDUCATION

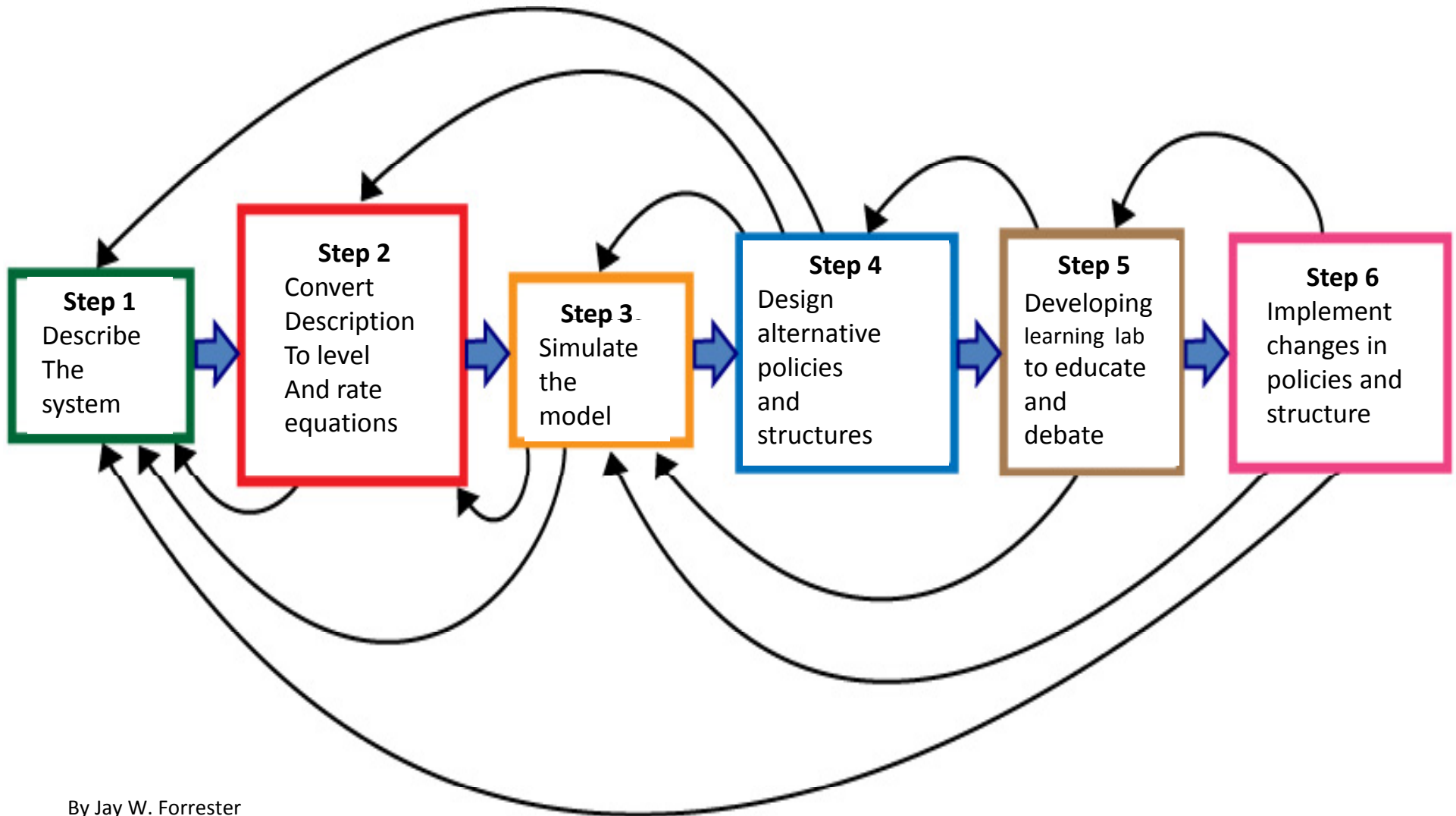By Pedro Dagoberto Almaguer Prado

INDEX

1. Designing the Future
2. Learning model – Follow this path
3. Schools based on human strengths and SD
4. Engagement is a leverage point for Schools
5. Model
   - Teacher engagement
   - Leadership of Principal
   - Learner engagement
   - HumanSigma
   - Model for Learning
6. Conclusions

LEARNING MODEL – FOLLOW THIS PATH.

Step 1
Describe
The
system

Step 2
Convert
Description
To level
And rate
equations

Step 3
Simulate
the
model

Step 4
Design
alternative
policies
and
structures

Step 5
Developing
learning lab
to educate
and
debate

Step 6
Implement
changes in
policies and
structure

By Jay W. Forrester

ENGAGEMENT IS A LEVERAGE POINT FOR SCHOOLS.

Engagement   R   **Performance**

+ (Engagement → Performance)

+ (Performance → Engagement)

SCHOOLS BASED ON HUMAN STRENGTHS AND SD
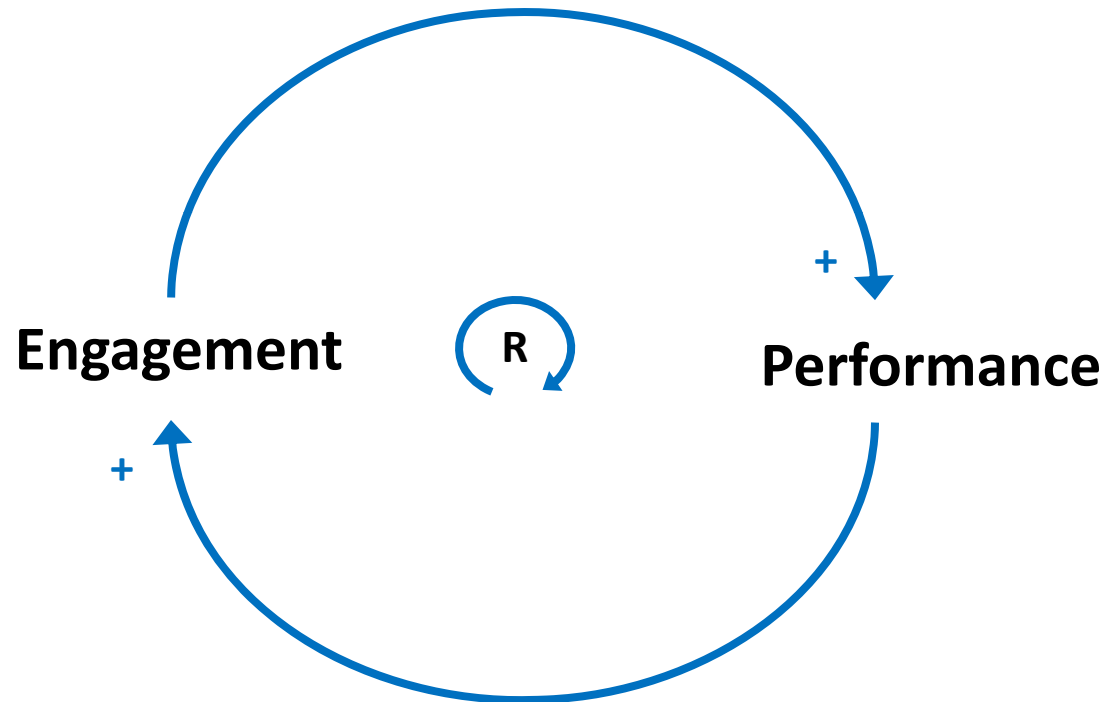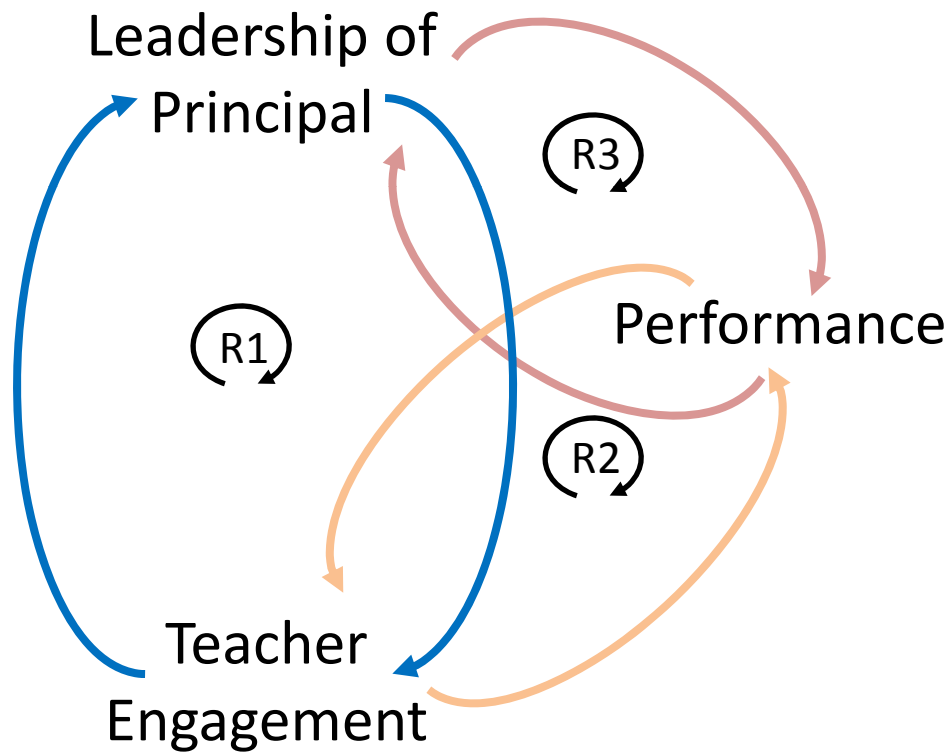

Schools based on Human Strengths and SD
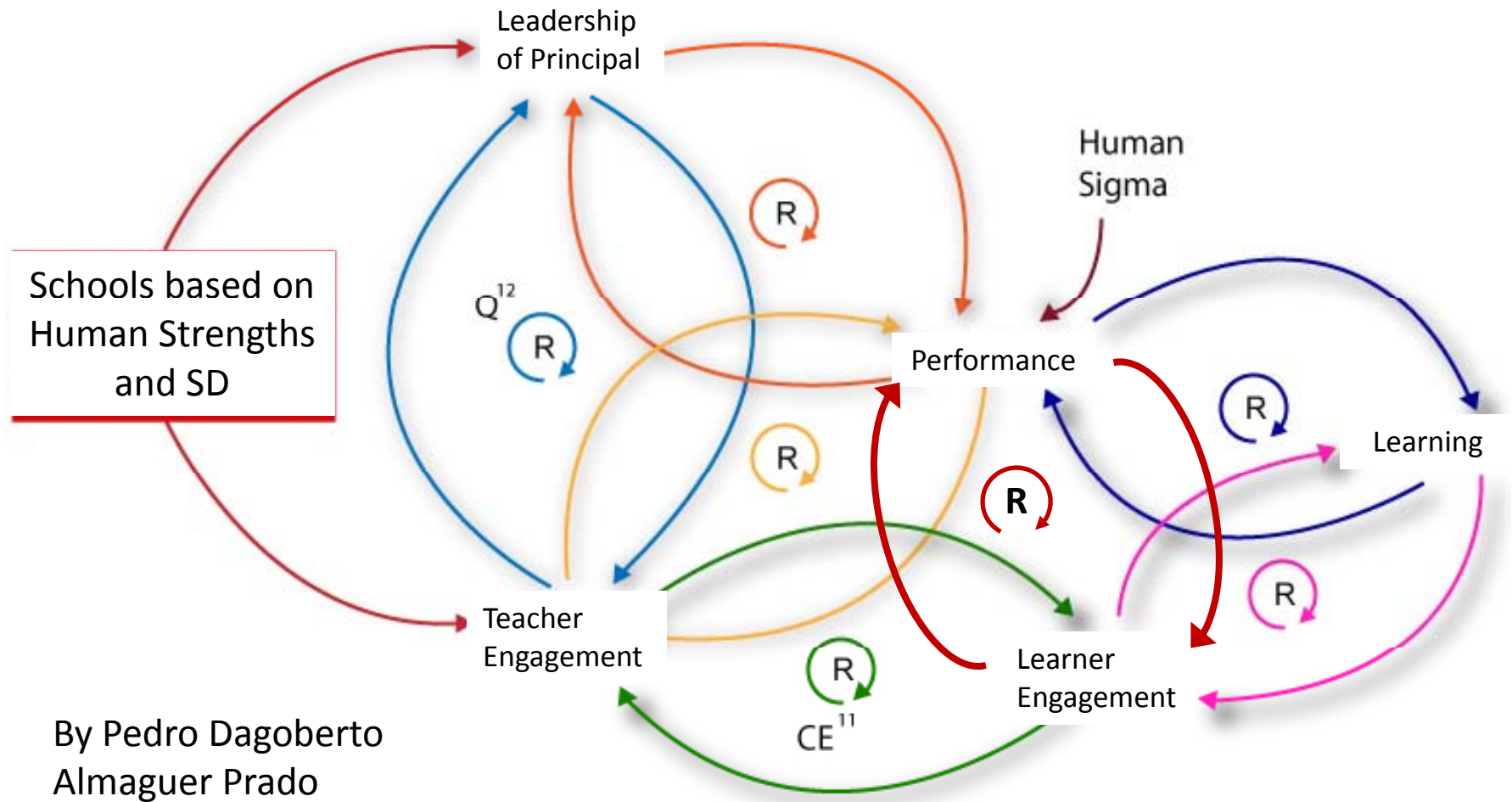
By Pedro Dagoberto Almaguer Prado

META-ANALYSIS OF ENGAGEMENT

Sample Size N= 421

Relations	r	Reference
R1	0.35	Gallup
R2	0.30	Schmidt & Rader (1996)
R3	0.26	Harter & Schmidt (2000)

Multiple Regression	Beta	SE*
Leadership of Principal	0.25	0.06
Teacher Engagement	0.18	0.06
R Multiple	0.35	0.05

Leadership of Principal

R3

R1

Performance

R2

Teacher Engagement

SURVEY OF TEACHER ENGAGEMENT Q^{12}

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?

Q00. Overall Satisfaction . . . . . .

Engagement Scores
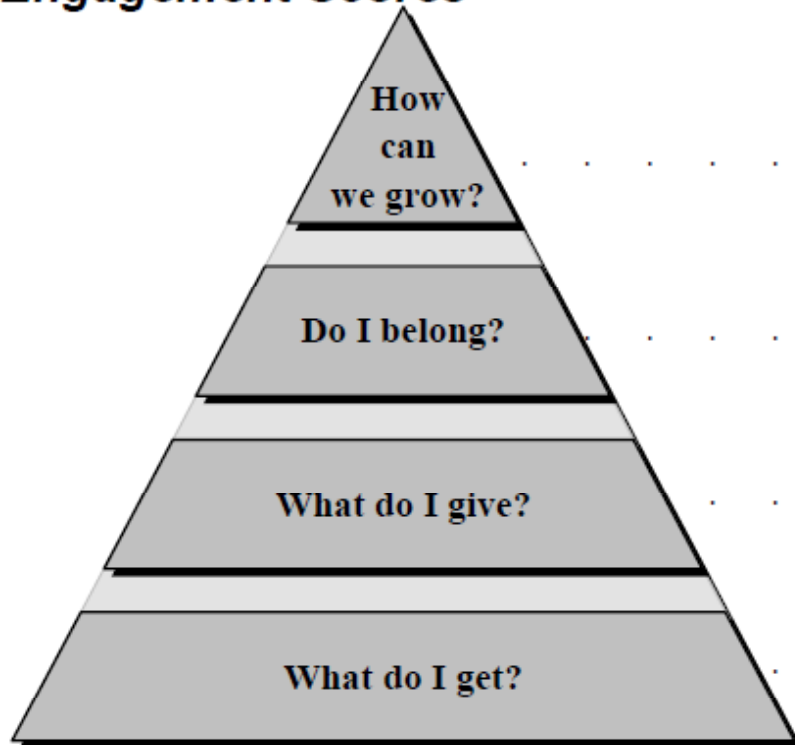
Gallup Q^{12}®

How can we grow?	Q12. Learn & grow . . . . . .
	Q11. Progress . . . . .
Do I belong?	Q10. Best friend . . . . . .
	Q09. Employees committed to quality .
	Q08. Mission/Purpose . . . .
	Q07. Opinions count . . . .
What do I give?	Q06. Development . . . . .
	Q05. Cares about me . . . . .
	Q04. Recognition . . . . .
	Q03. Opportunity to do best . . .
What do I get?	Q02. Have materials & equipment . .
	Q01. Know what's expected . . .

ENGAGEMENT CLASSIFICATION
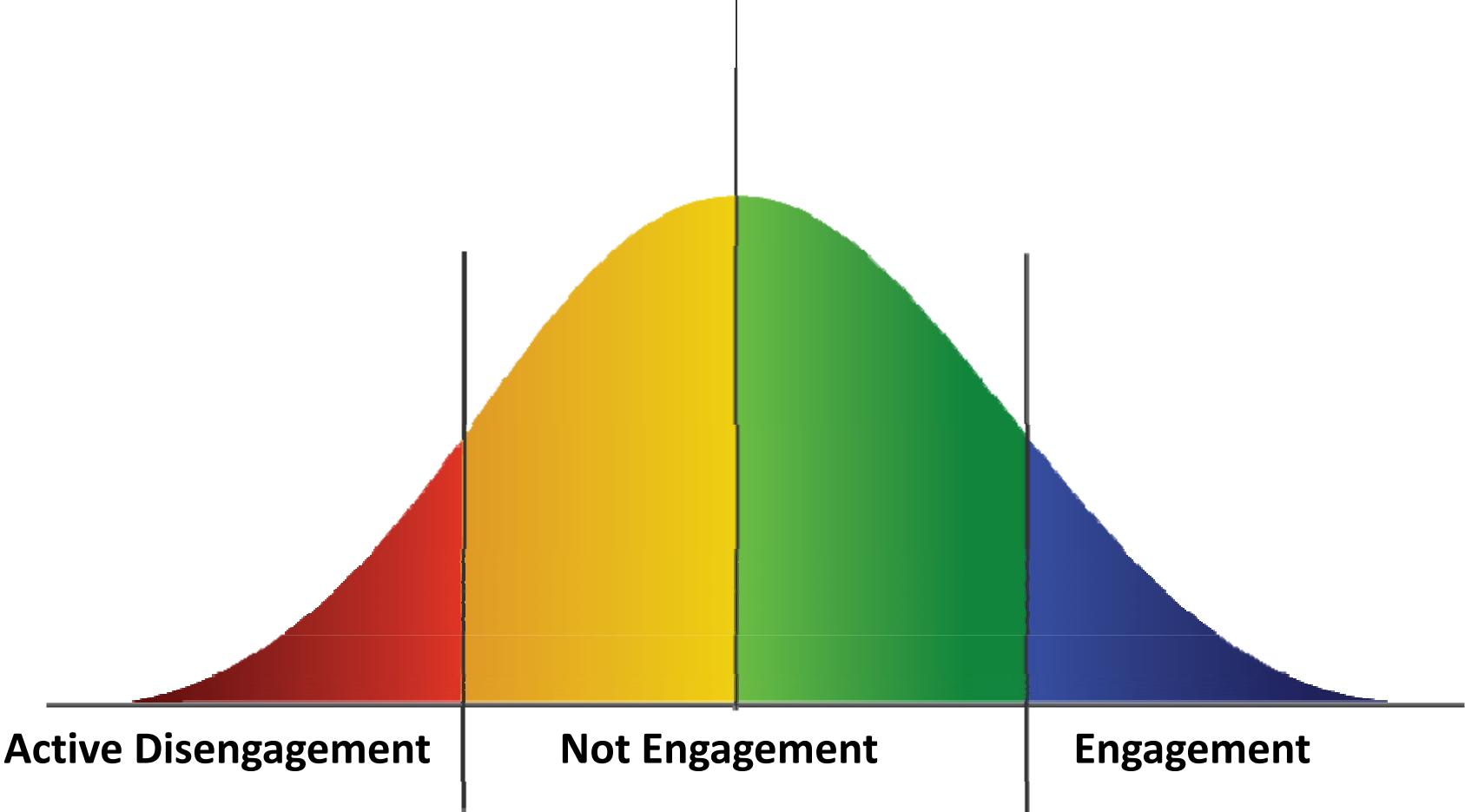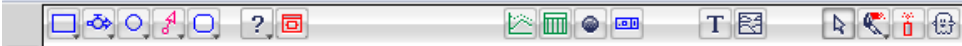
Active Disengagement   **Not Engagement**   **Engagement**
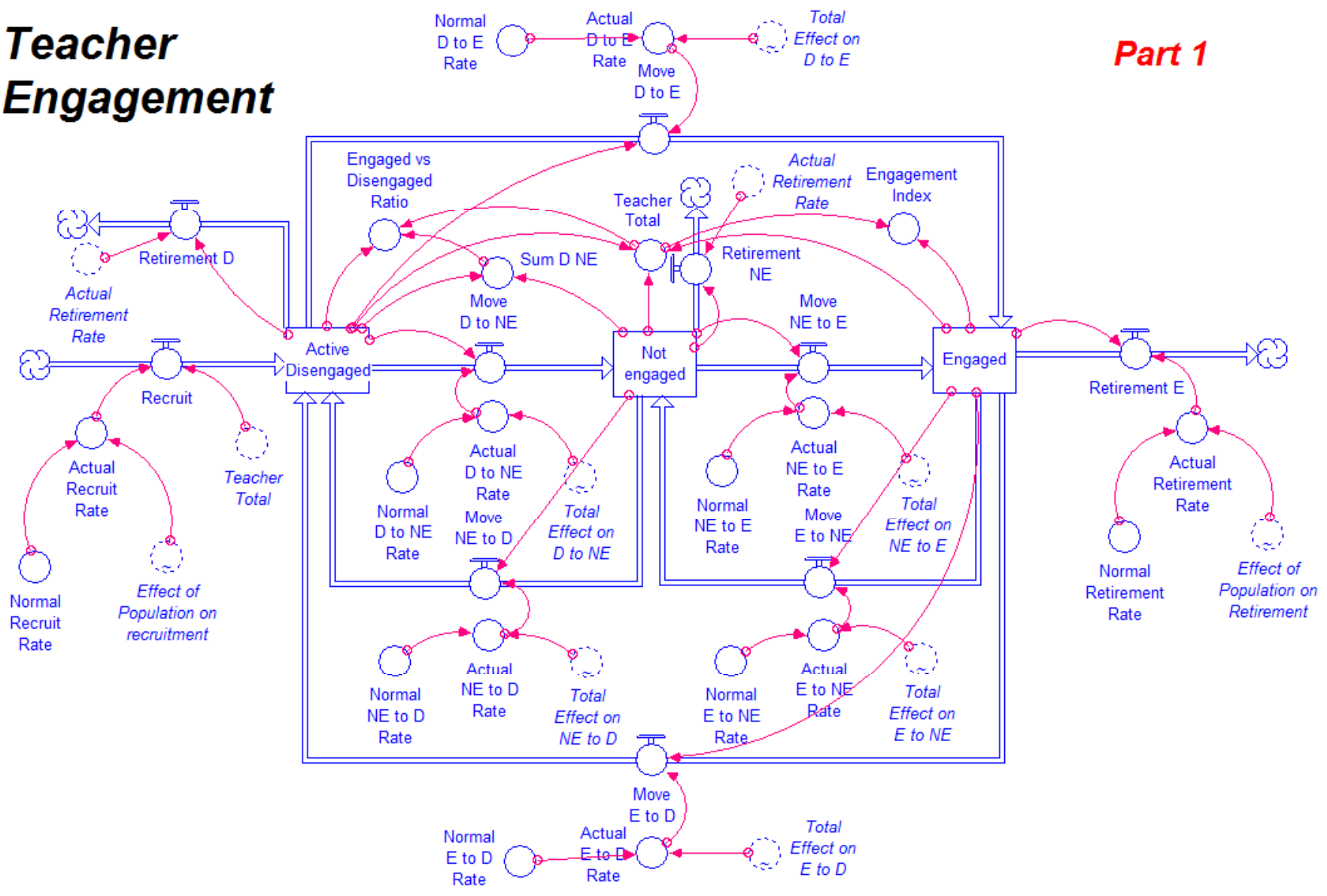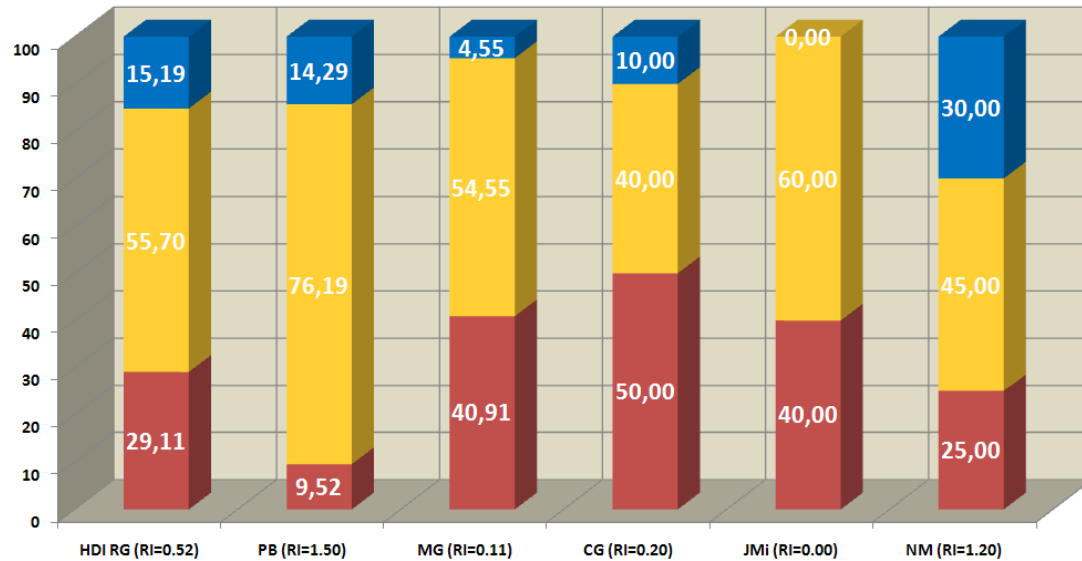
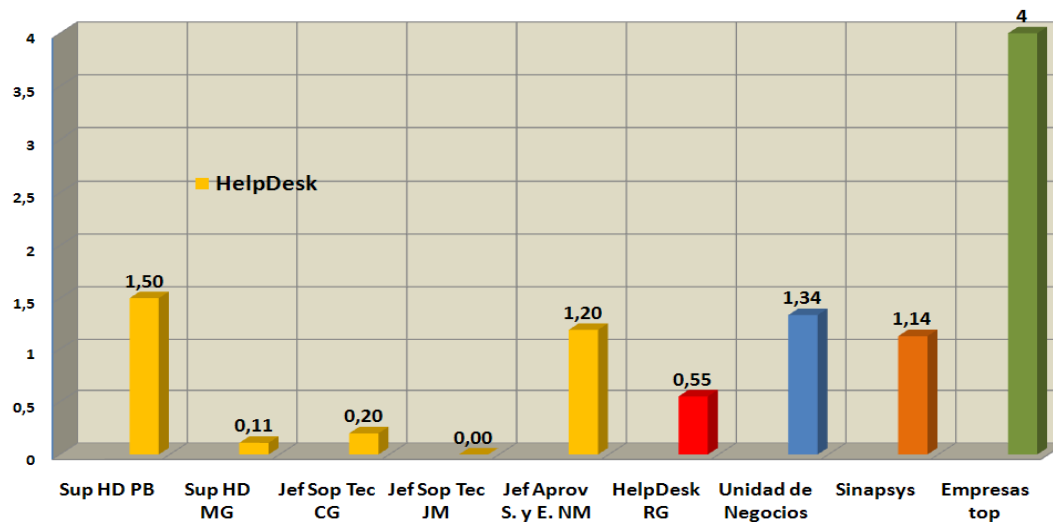# ENGAGEMENT INDEX – INTERNATIONAL COMPARISON
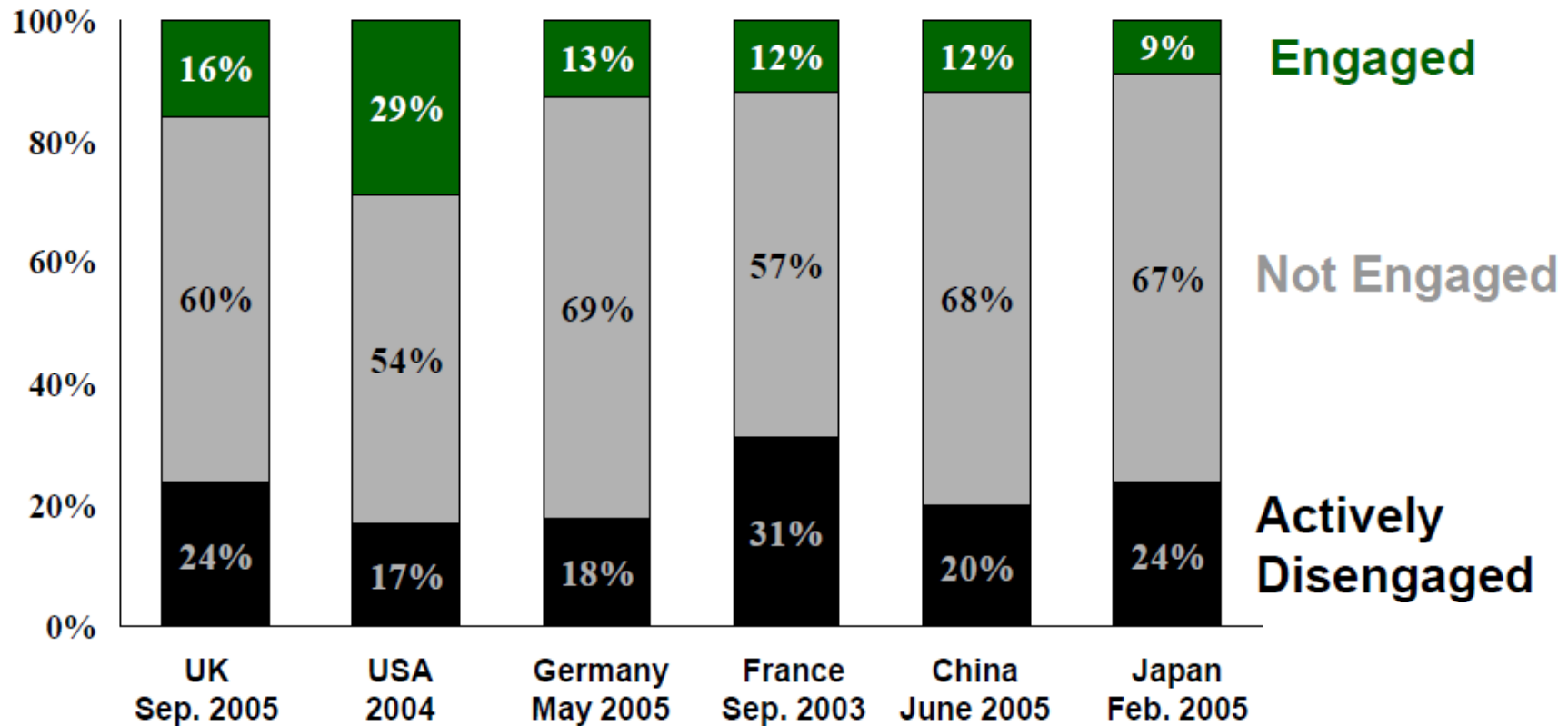
ENGAGEMENT (BI) (Business Intelligence)

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

Engagement Math Department

Question	Mathematics	Probability and Statistics
Q12. Learn & grow	29	33
Q11. Progress	24	33
Q10. Best friend	12	8
Q09. Emp. committed to quality	24	42
Q08. Mission / Purpose	47	50
Q07. Opinions count	24	25
Q06. Development	12	8
Q05. Cares about me	24	8
Q04. Recognition	18	8
Q03. Opportunity to do best	41	33
Q02. Have materials & equipment	29	25
Q01. Know what's expected	53	67
Q00. Overall Satisfaction	59	67

■ Mathematics   ■ Probability and Statistics

ENGAGEMENT - CATEGORIZATION

Comparison between departments

Legend: Mathematics, Arts, HR, Engineering

How can we grow?
- Mathematics: 40
- Arts: 26
- HR: 54
- Engineering: 50

Do I belong?
- Mathematics: 35
- Arts: 26
- HR: 38
- Engineering: 55

What do I give?
- Mathematics: 34
- Arts: 24
- HR: 45
- Engineering: 40

What do I get?
- Mathematics: 53
- Arts: 41
- HR: 65
- Engineering: 60
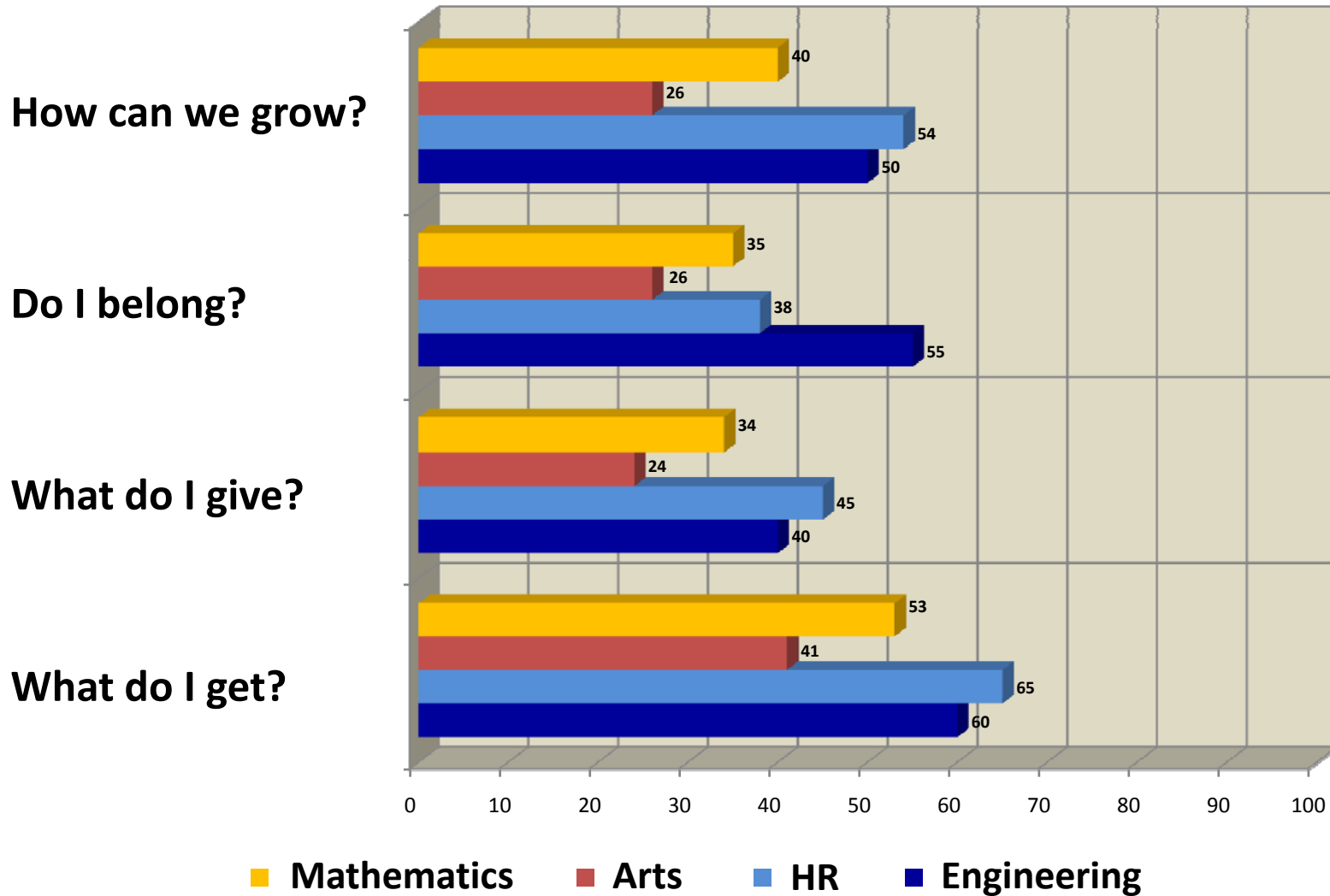
Longitudinal Studies of Teacher's Engagement

| 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

Social Intelligence and the Biology of Leadership
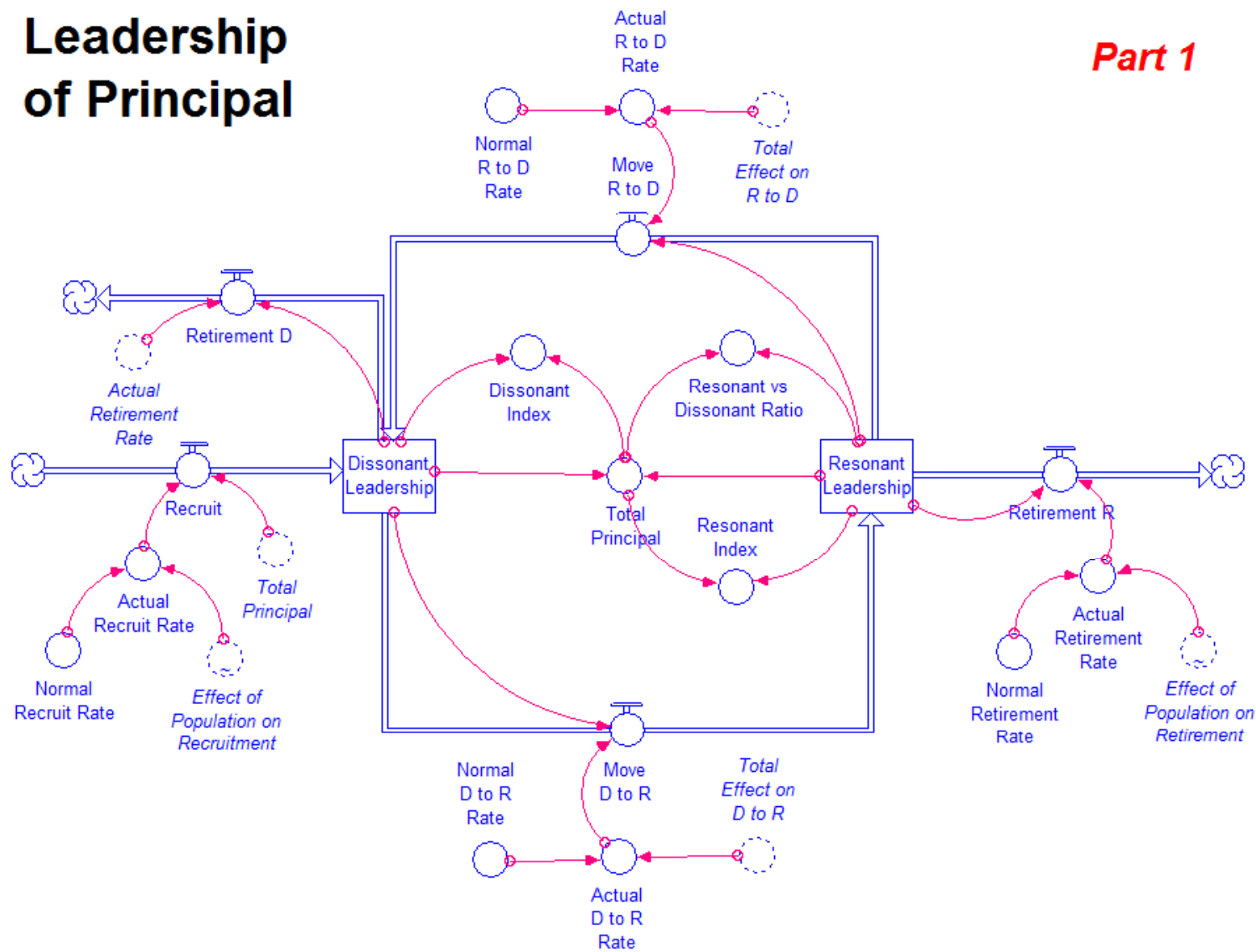
by Daniel Goleman and Richard Boyatzis

Disonant Leadership	Impact on climate
Coercive Commanding	Strongly negative
Pacesetting	Highly negative

Resonant Leadership	Impact on climate
Visionary	Most strongly positive
Coach	Highly positive
Democratic	Positive
Affiliative	Positive

Active Disengagement

Engagement

Q1   Q2   Q3   Q4
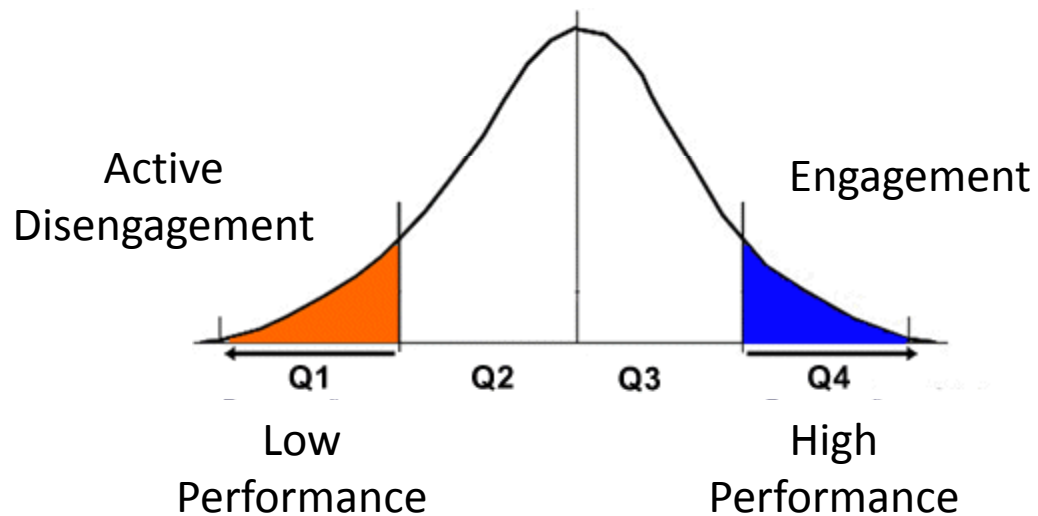
Low Performance

High Performance

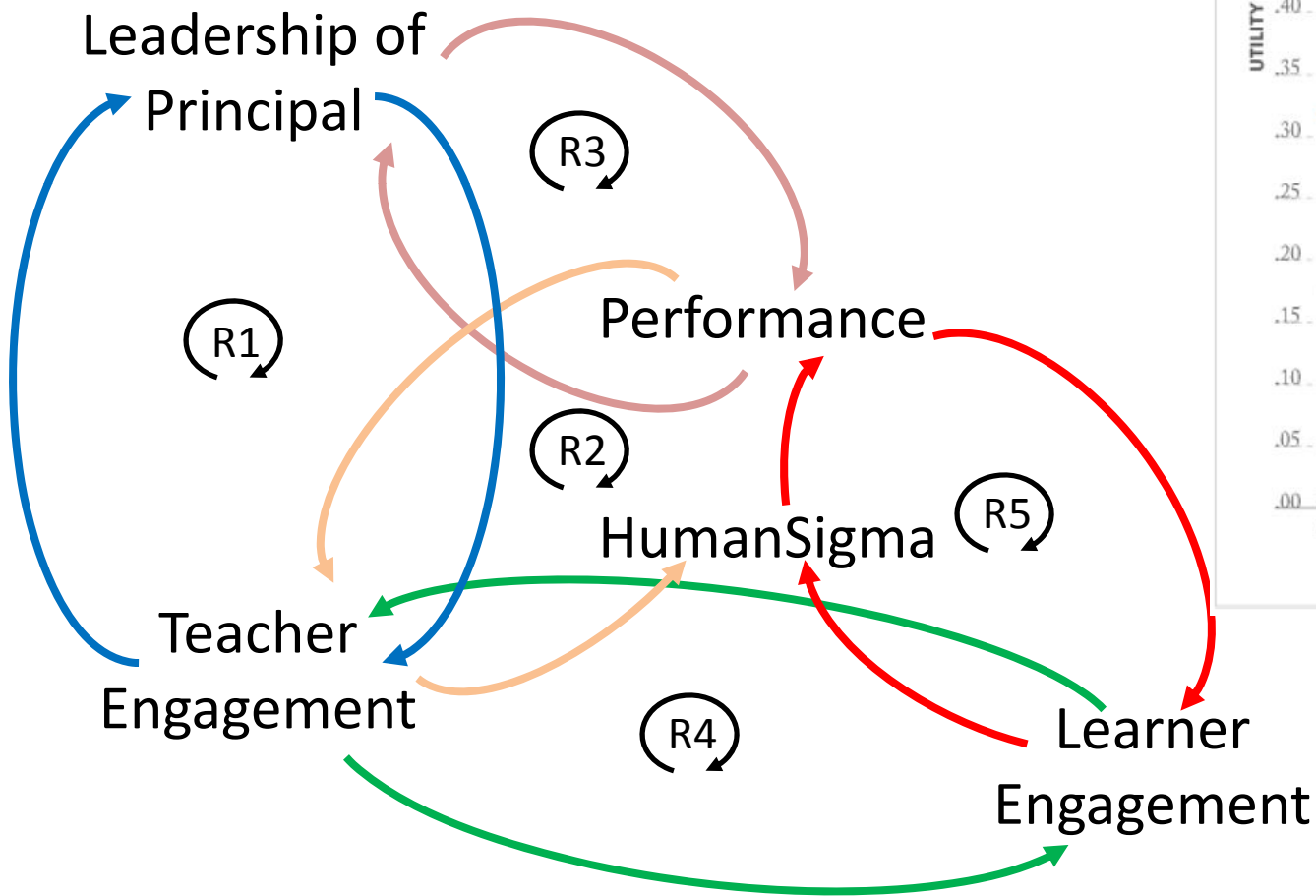# Leadership of Principal - Recruitment and selection & training

Emotional & Social Intelligence	High Performance			Low Performance			t-Test	Effect Size	
(Goleman & Boyatzis)	N	Mean	SD	N	Mean	SD	Value	Value	Sig2
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.

HUMANSIGMA

A Meta-Analysis
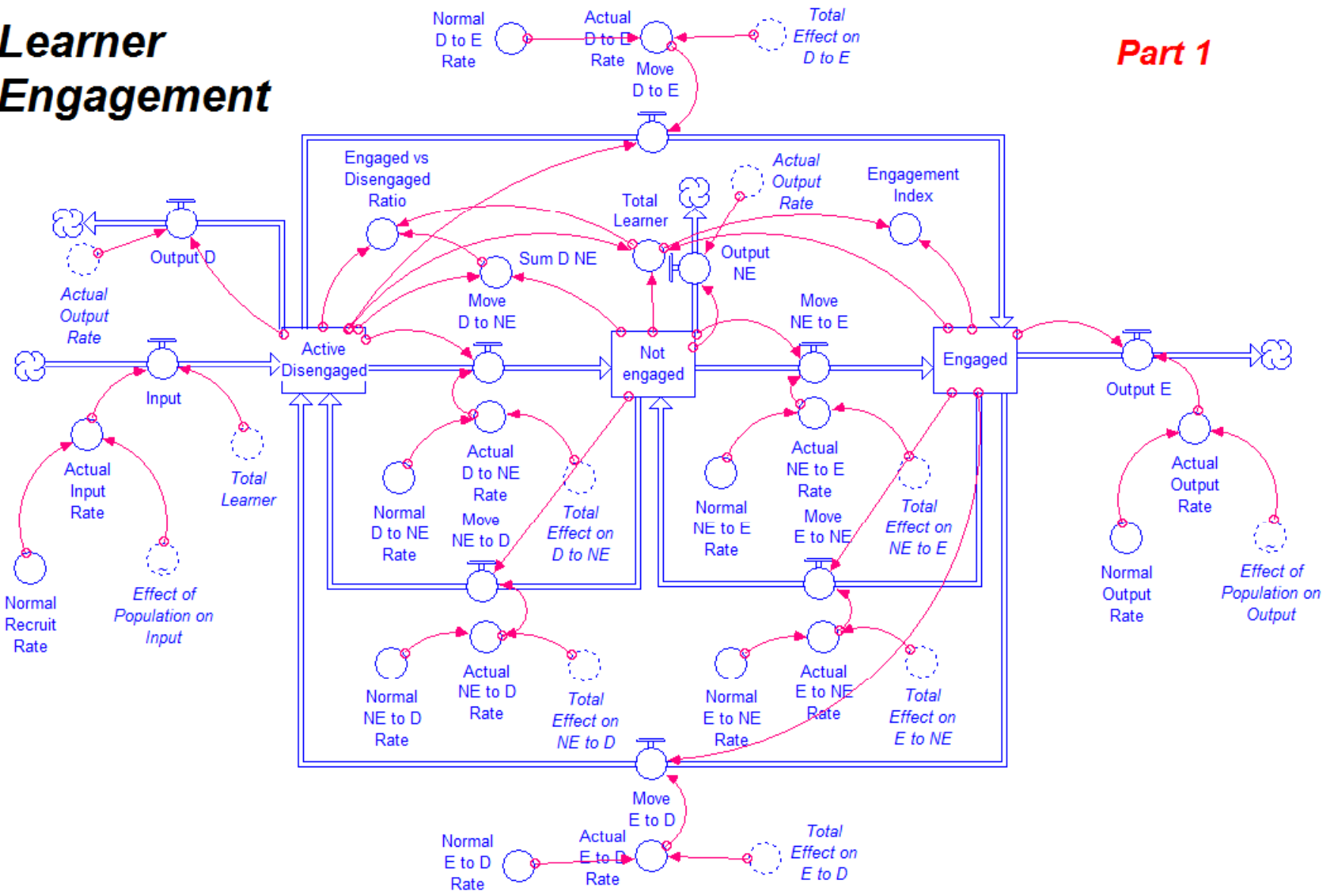
LEARNER ENGAGEMENT (UWES-S)

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 i'm 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

File   Edit   View   Model   Run   Help

HumanSigma

Part 1

Simplified Calculation

Inputs

Outputs

*Teacher
Engagement.Te HS*

HumanSigma
Normal

HumanSigma
Calc

HumanSigma
Ratio

*Learner
Engagement.Le HS*

IMPACT COEFFICIENTS FOR HUMANSIGMA BANDS[1]
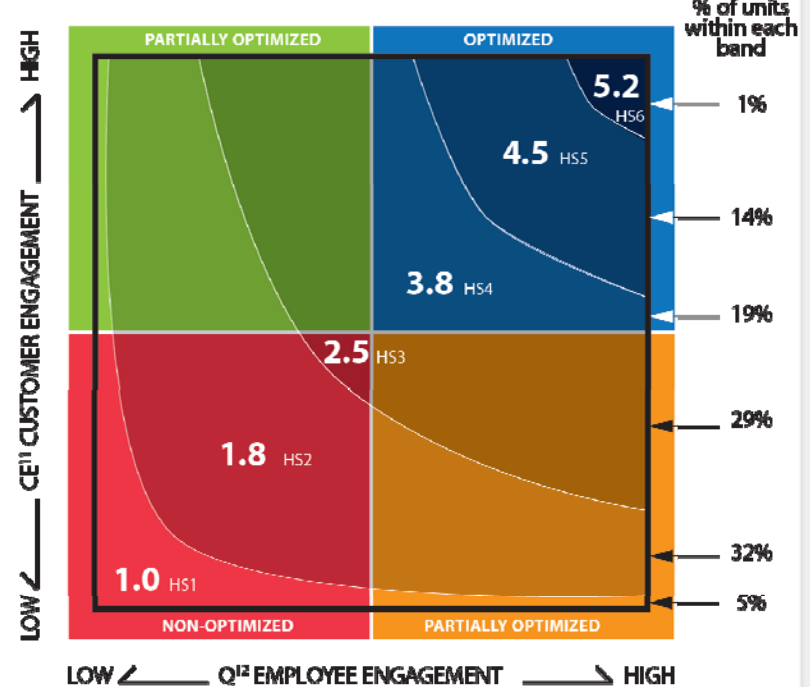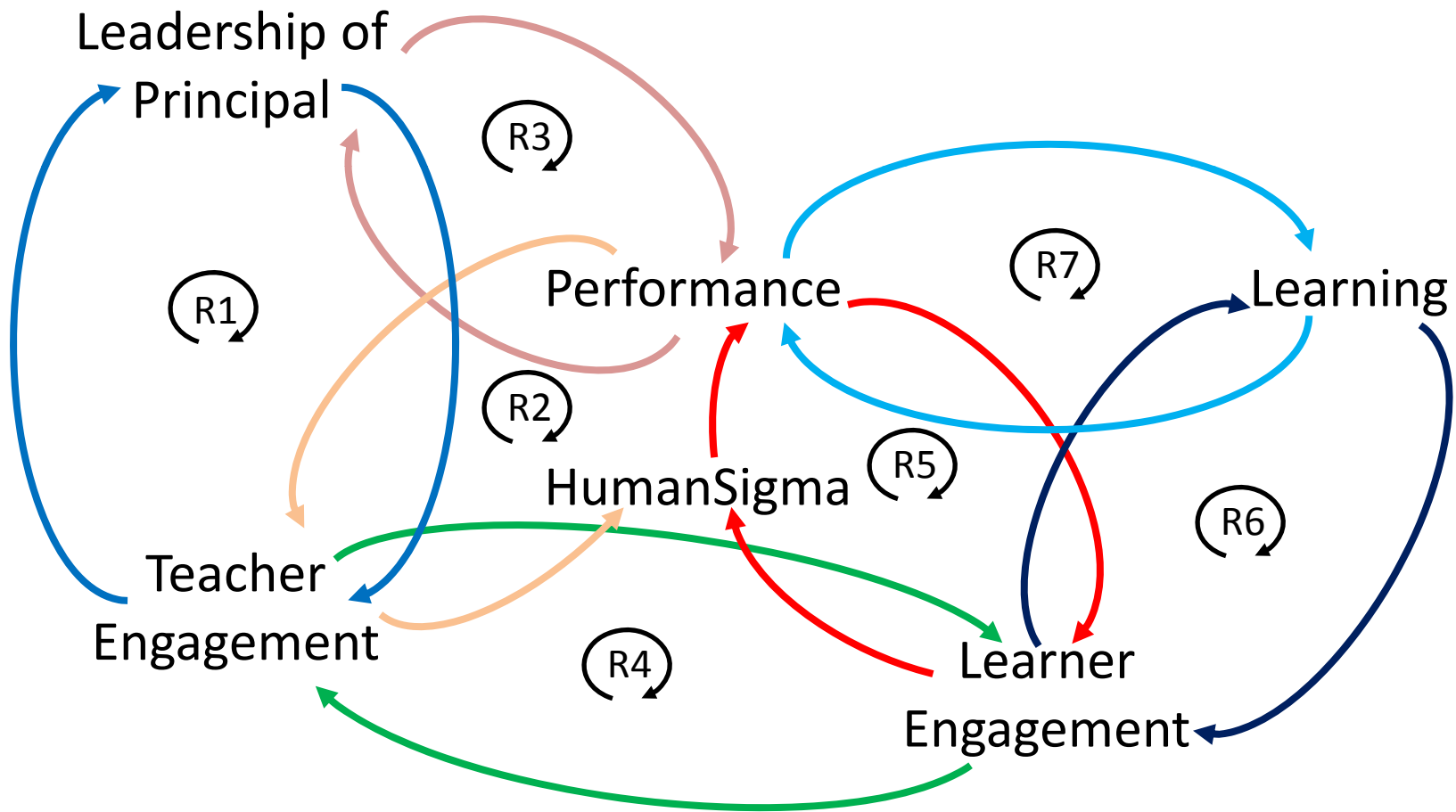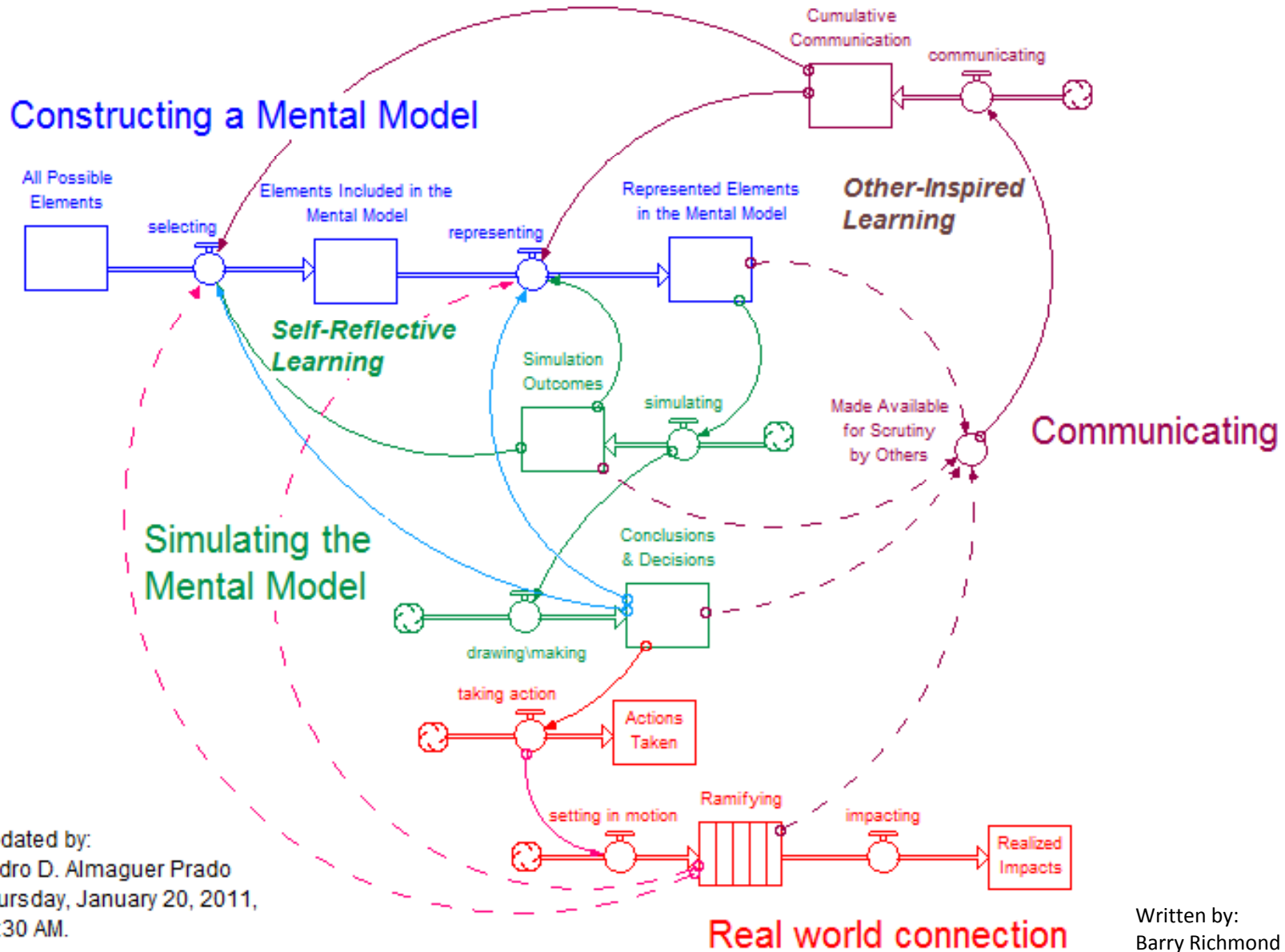
% of units
within each
band

PARTIALLY OPTIMIZED | OPTIMIZED

5.2 HS6

4.5 HS5

3.8 HS4

2.5 HS3

1.8 HS2

1.0 HS1

1%

14%

19%

29%

32%

5%

CE[1] CUSTOMER ENGAGEMENT — HIGH / LOW

NON-OPTIMIZED | PARTIALLY OPTIMIZED

LOW — Q[12] EMPLOYEE ENGAGEMENT — HIGH

MODEL FOR LEARNING

POLLEN learning lab to improve the public education system & PISA.
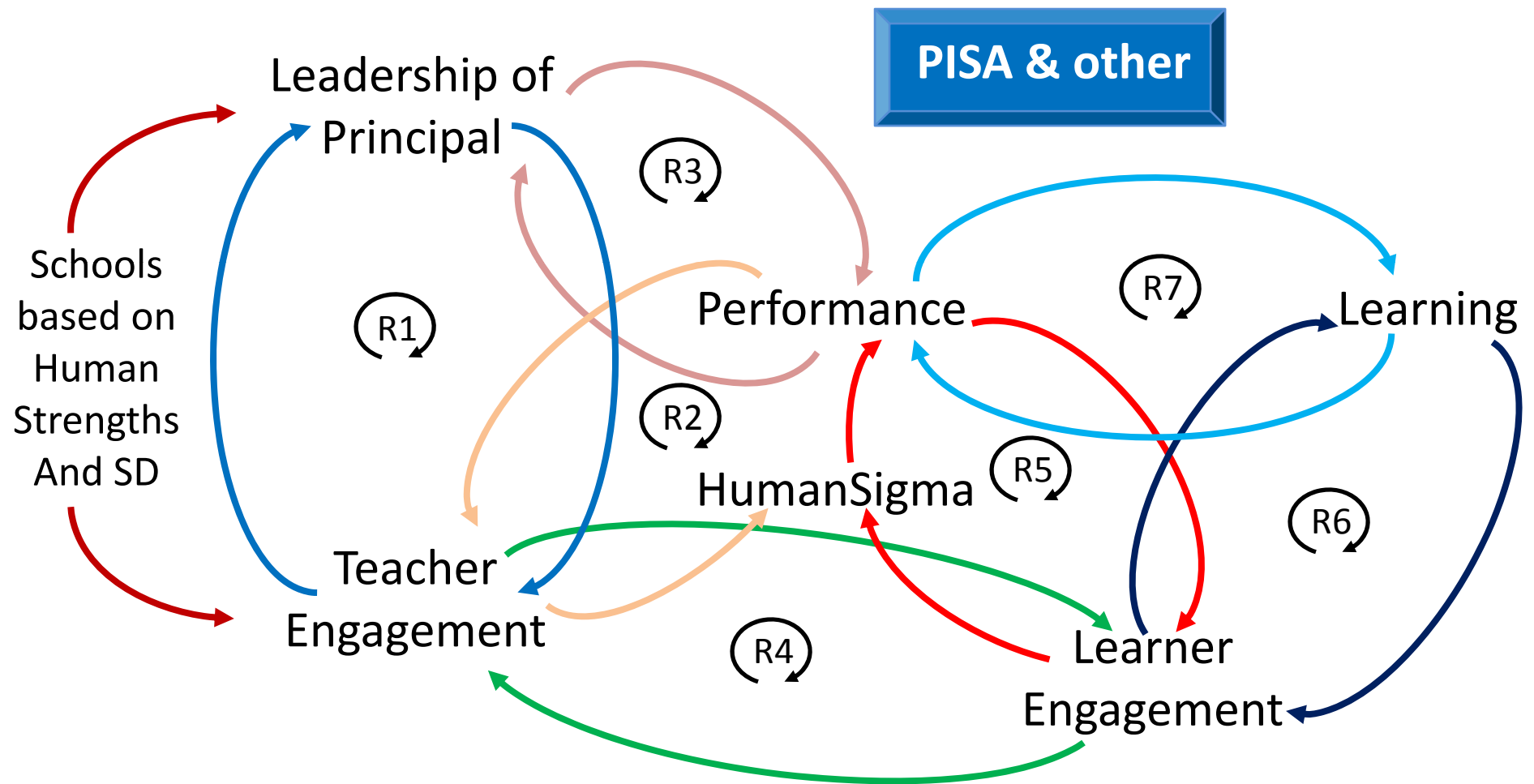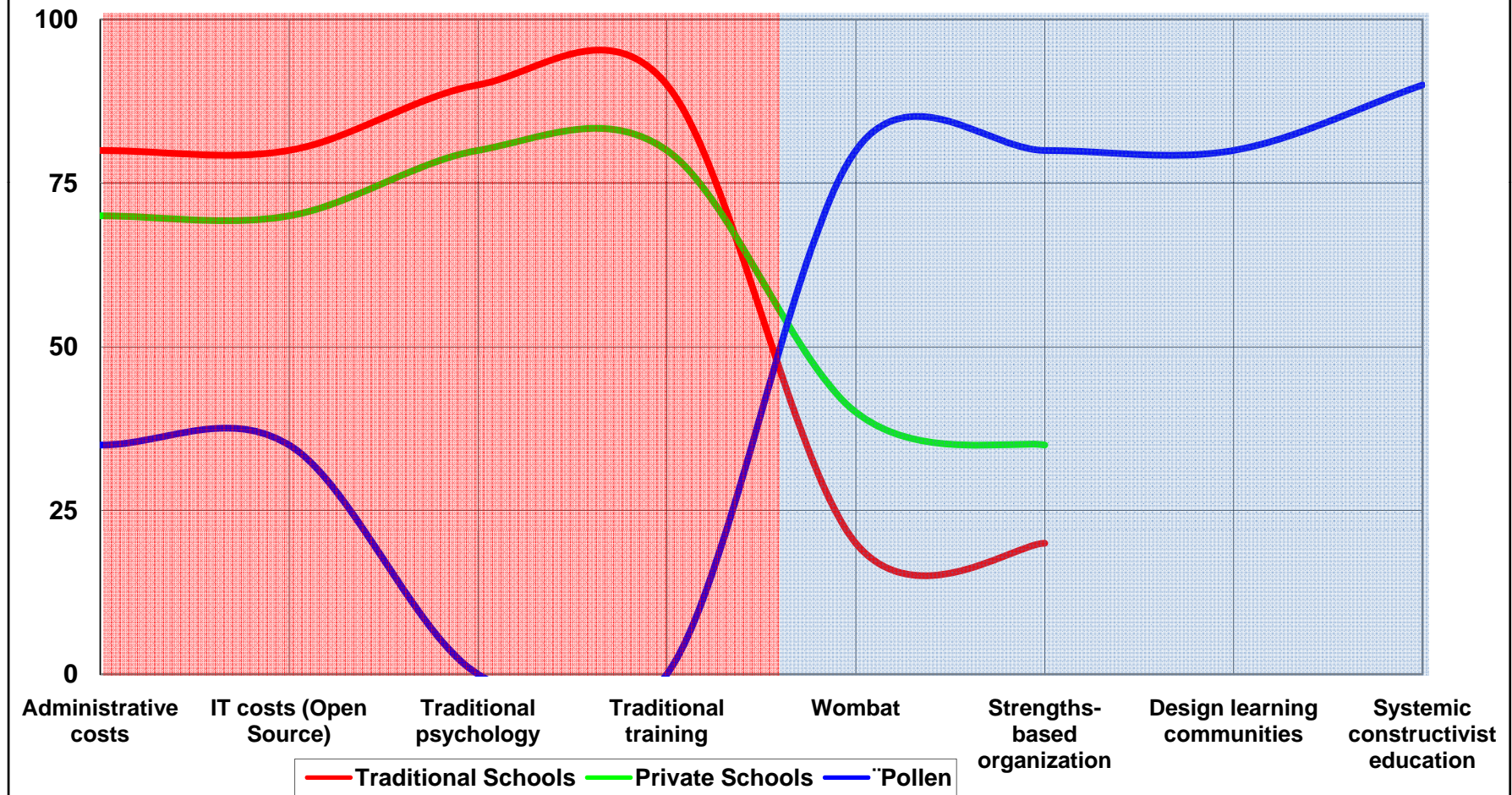
CONCLUSIONS

1. 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
2. Engagement is a leverage point for schools
   - Teacher engagement
   - Learner engagement
   - Engaging diversity
3. Develop longitudinal studies to discover areas of opportunity in human development.
4. Innovate in value for connecting with the community.
5. 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

85%	15%

Emotional and social competencies

Systemic Constructivist Education

MODEL TO IMPROVE EDUCATION

GRUPO SINAPSYS
[*Organización que Aprende*]®

Pedro D. Almaguer N.
Collaborator

Ramiro L. Almaguer N.
Modeling

Pedro D. Almaguer P.
Author

Beatriz E. Navarro V.
Collaborator

Ruth R. Almaguer N.
Design

POLLEN learning lab to improve the public education system and PISA.

by Pedro Dagoberto Almaguer Prado is licensed under a
Creative Commons Reconocimiento-NoComercial-CompartirIgual 3.0 Unported License.
Based on a work at www.gruposinapsys.com