

# USING SYSTEM DYNAMICS TO MODEL AN ACCELERATED LEARNING LOOP: APPLICATIONS FOR CREATIVITY\*

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Abstract.

**Purpose:** to integrate psychodynamic and cognitive approaches in the development of a workshop to improve creativity. *Systemic Thinking* was used for the integration of both theoretical approaches. Creativity was measured through a validated translation of Torrance Test. **Methods.** 30 participants were recruited from a high school for low income, working adults in Mexico City. They were randomly allocated to control condition (only pre and posttest) and experimental condition (seven 60-minute sessions workshop on creativity). Verbal creativity was assessed pre- and post experiment for originality and fluidity. Statistical Test was Wilcoxon signed ranks T for matched pairs and ranks. **Results.** There was a statistically significant difference in both fluidity ( $p < 0.01$ ) and originality between pre-test and posttest in the experimental group; control group did not report differences pre-post tests ( $p < 0.01$ ). **Conclusions.** The developed workshop seems to enhance verbal creativity. Although not conclusive, observations of student development also suggest an increase in self-confidence regarding their intellectual capacity.

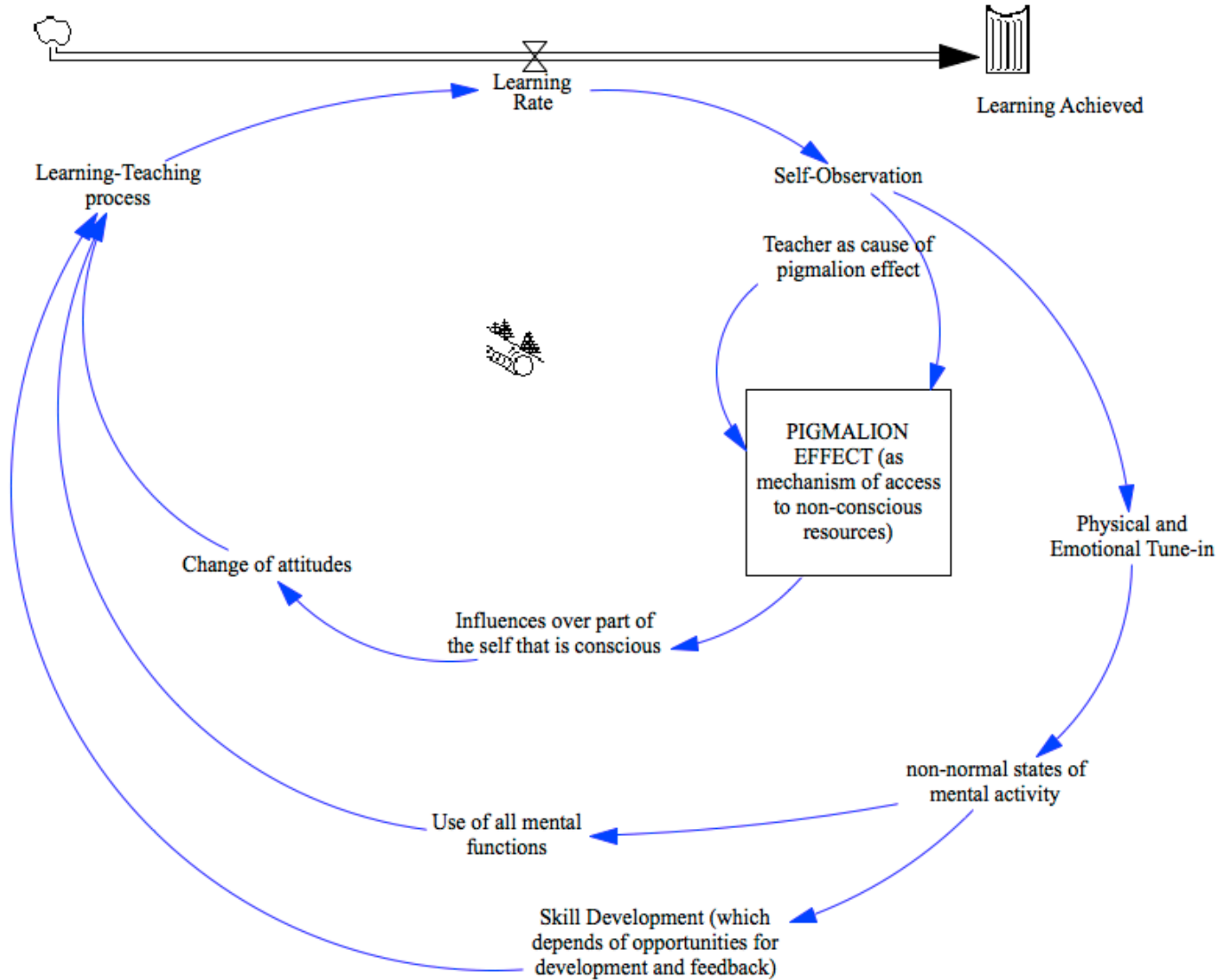
Educational techniques used for this workshop:

- Suggestopedy
- Mind mapping
- Systemic thinking

\* Presentation made at the 2014 Berkeley Education Day. May 30<sup>th</sup>, 2014. School of Education. UC Berkeley. Slides available upon request.

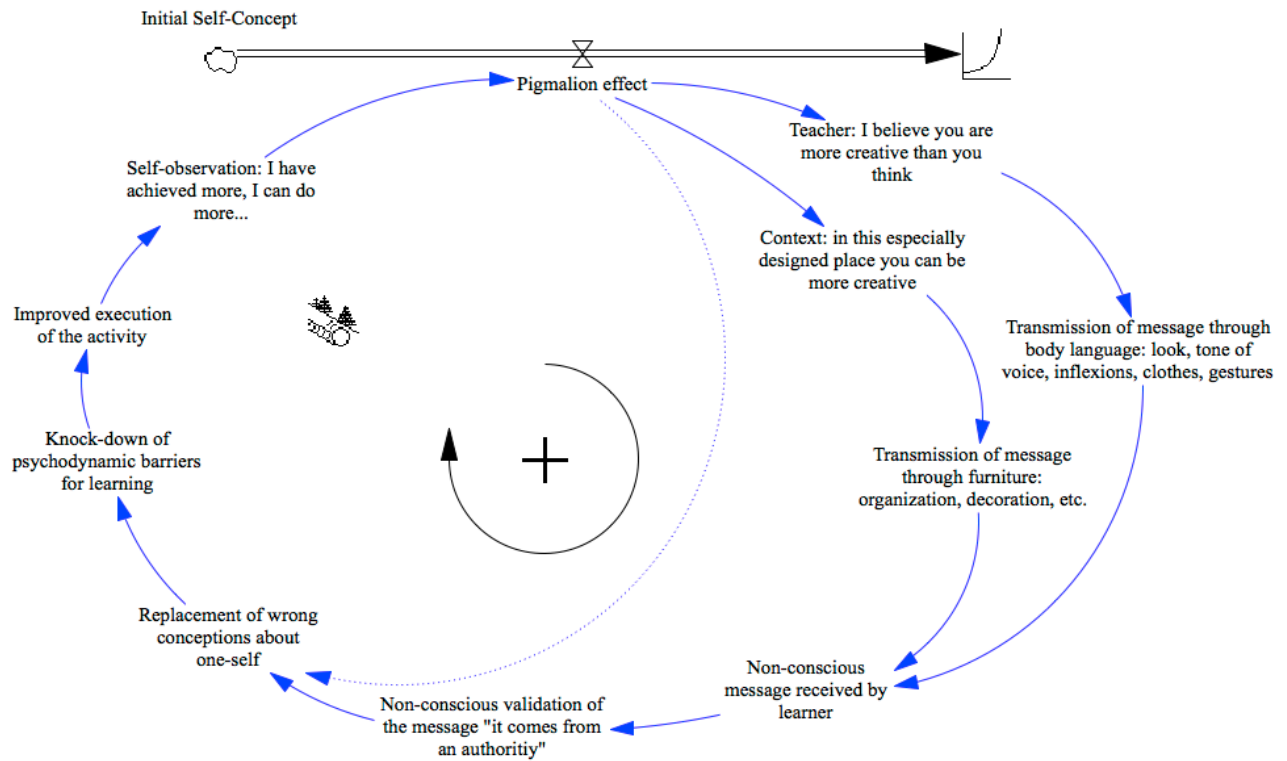
# Main mental dynamic

## *Description of potential pathway for accelerating learning*



# Example of one technique to accelerate learning

## NON VERBAL communication of Pigmalion Effect



**Table 1. Torrance Test Scores**

Subject #	Status	Fluidity				Originality			
		Baseline	Post	Difference	Hierarchical Difference	Baseline	Post	Difference	Hierarchical Difference
1	Experimental	22	36	14	4.5	3	8	5	4
2	Exper	22	46	24	6	4	25	21	7.5
3	Exper	23	35	12	3	7	16	9	5
4	Exper	19	58	39	8	1	16	15	6
6	Exper	19	20	1	1	1	5	4	3
12	Exper	16	23	7	2	2	23	21	7.5
15	Exper	8	22	14	4.5	1	2	1	1
16	Exper	22	72	50	9	9	35	26	9
21	Exper	21	49	28	7	2	5	3	2
7	Attrition	27	-	-	-	10	-	-	-
5	Attrition	14	-	-	-	1	-	-	-
10	Attrition	12	-	-	-	0	-	-	-
11	Attrition	23	-	-	-	4	-	-	-
13	Attrition	21	-	-	-	6	-	-	-
14	Attrition	26	-	-	-	7	-	-	-
17	Attrition	8	-	-	-	0	-	-	-
19	Attrition	13	-	-	-	5	-	-	-
22	Attrition	21	-	-	-	6	-	-	-
23	Attrition	22	-	-	-	4	-	-	-
25	Attrition	11	-	-	-	1	-	-	-
27	Attrition	45	-	-	-	15	-	-	-
8	Control	7	18	11	9	0	1	1	2
9	Control	12	20	8	8	0	3	3	5
18	Control	24	26	2	3	6	2	-4	6.5
20	Control	11	15	4	5	1	3	2	4
24	Control	19	20	1	1.5	3	3	0	
26	Control	15	12	-3	4	2	3	1	2
28	Control	7	12	5	6.5	0	1	1	2
29	Control	15	20	5	6.5	2	6	4	6.5
30	Control	22	21	-1	1.5	2	10	8	8

Dif F= diferencia en fluidez (pretest-postest).  
Dif. O= diferencia en originalidad (pretest-postest).  
Jerarq. F= jerarquía en escala ordinal de las dif F.  
Jerarq. O= jerarquía en escala ordinal de las dif. O.