The 7 C's of Creativity

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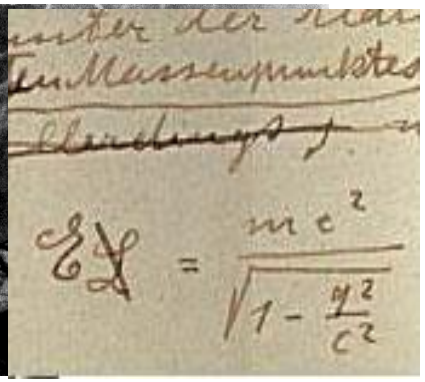
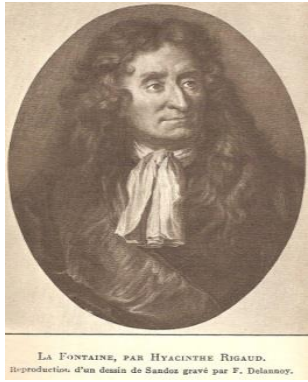
Creativity: A 21st century competency

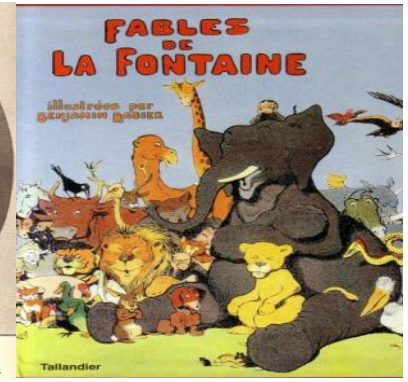
- -2000000 years , *homo habilis* creates hunting tools – first evidence
- 2010 IBM international study of CEOs (N=1541)
  - Creativity is the top ability sought after for top management
- 2013 Adobe survey, 4000 grade 1--12 teachers and parents, (USA, UK, Germany, Australia)

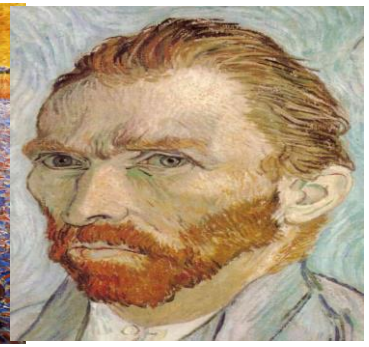
  85 to 90% of parents, 65 to 87 % of teachers : « Creativity is essential for the future economy »
- 2015-2018 OECD – International study on educating creativity
- 2016 World Economic Forum - Creativity is one of the top three capacities for employability
- 2021 PISA , creativity complementary domain
- 2019-2022 Creativity in Higher Education Study, Universities, OECD

- Creativity: the ability to generate new productions that are meaningful in their context



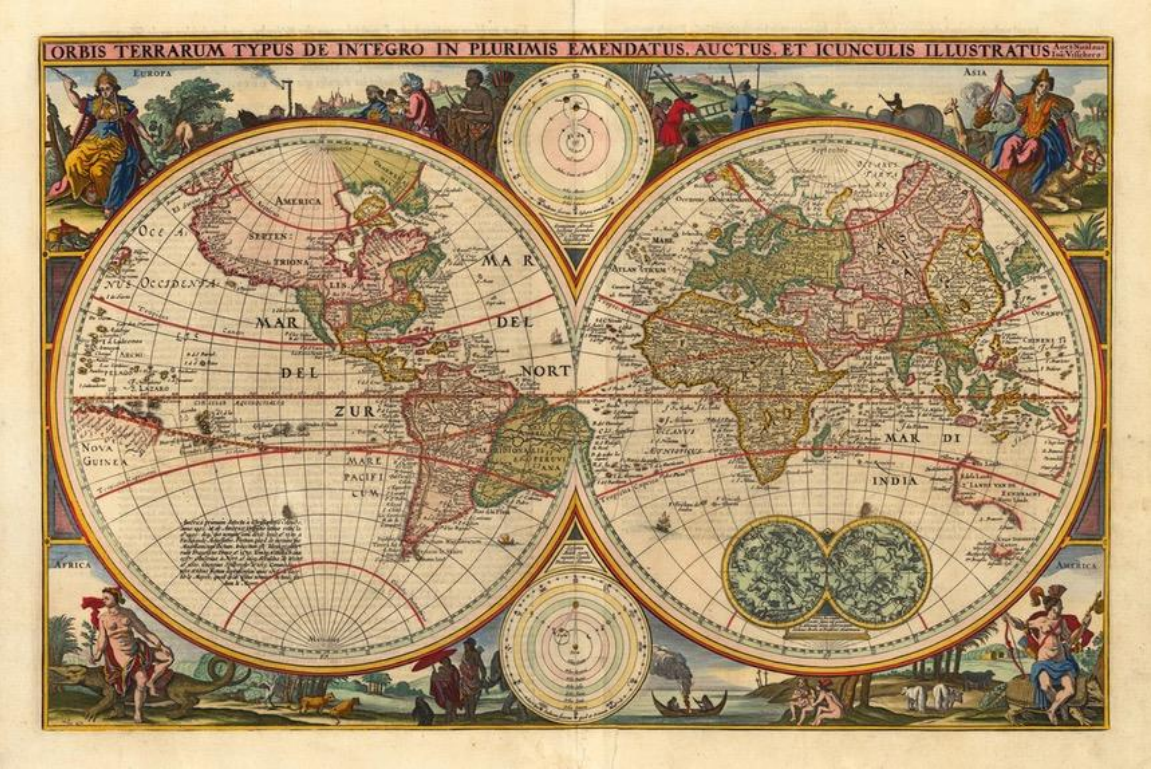


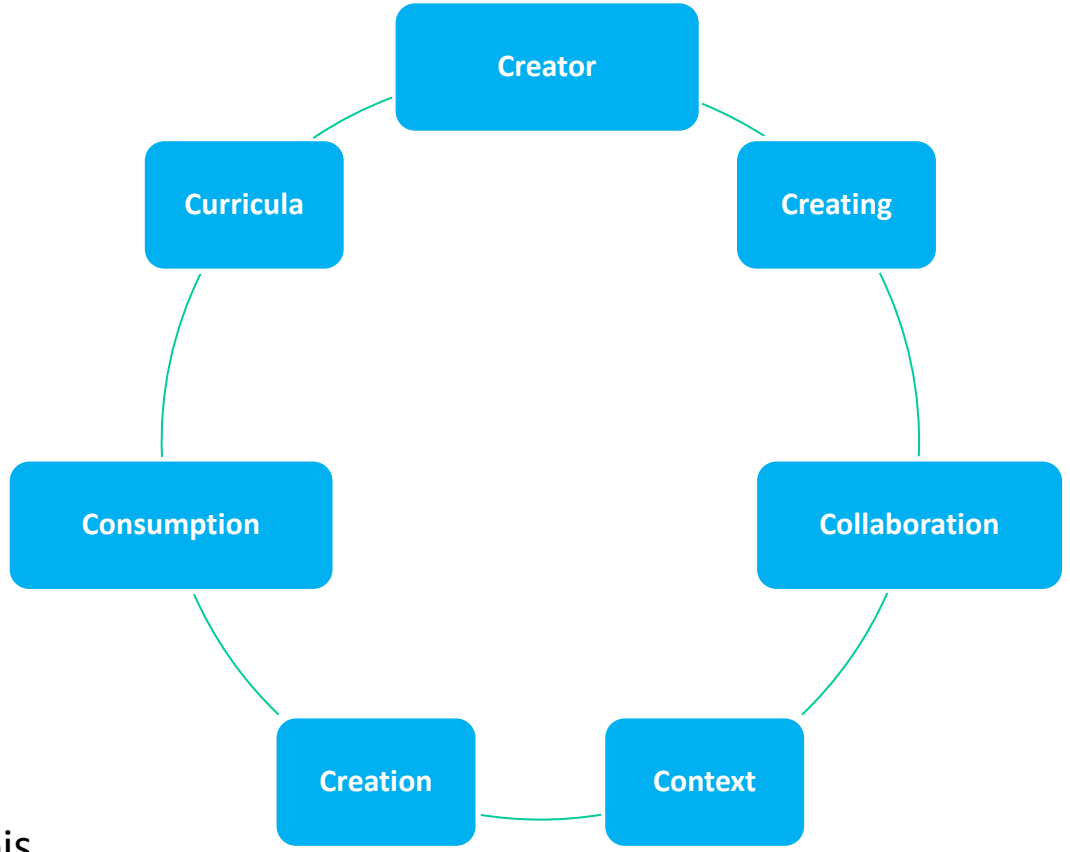




Introduction

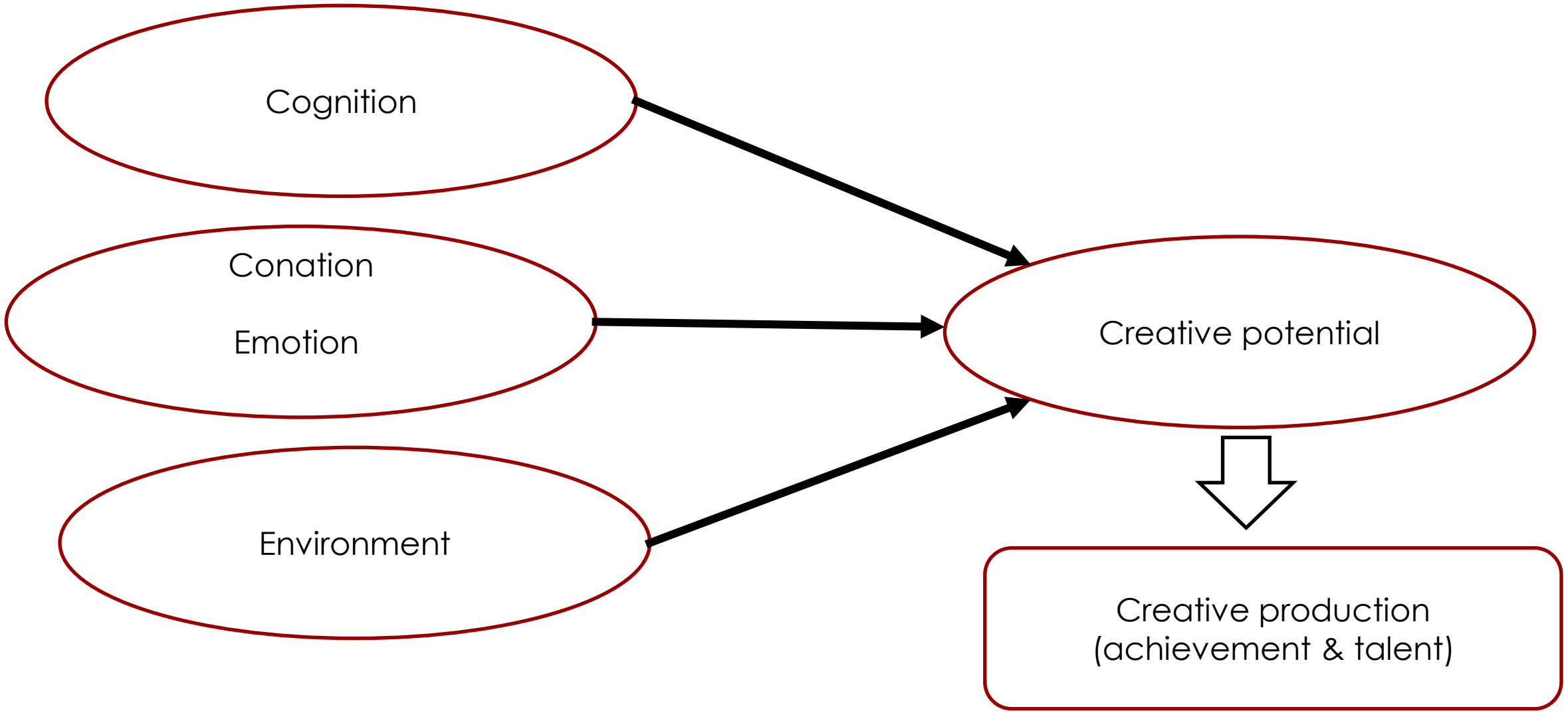
- Creativity has been examined for many centuries, but has received increasing attention since 1950.





@ LaPEA, University of Paris (Marion Botella, Samira Bourgeois, Jean-Marie Burkhardt, Xavier Caroff, Julie Collange, Jérôme Guegan, Julien Nelson + collaborators)

Creators

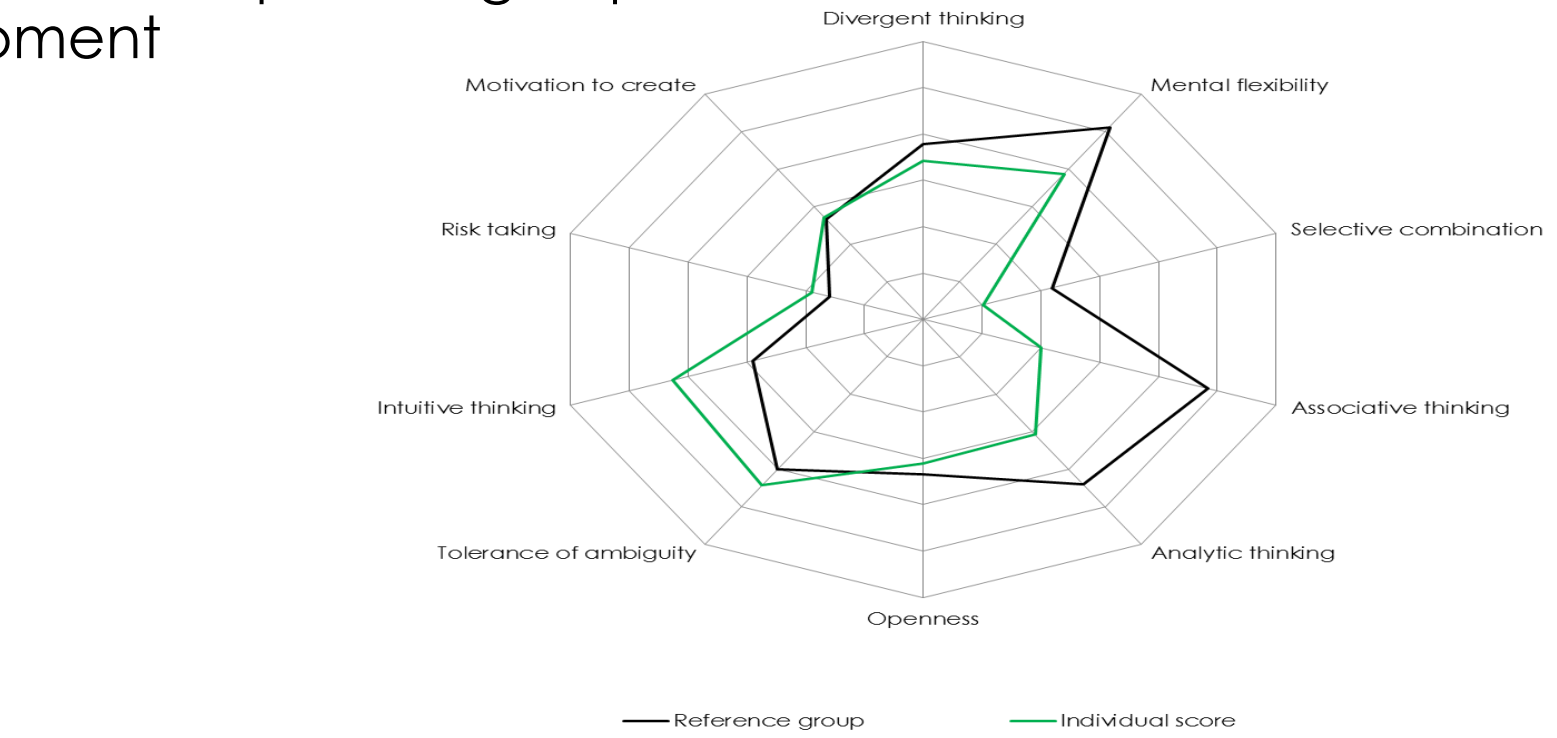


Sternberg & Lubart (1991, 1995), Lubart et al. (2003/2013)

The Creative Profiler

Evaluation, identification, selection, development

- Job analysis
- Profiler with job-relevant comparison group
- Professional development

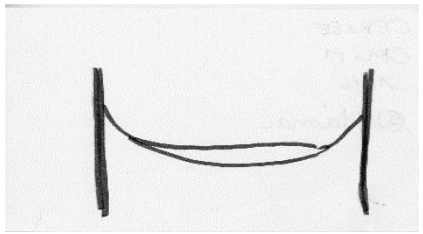
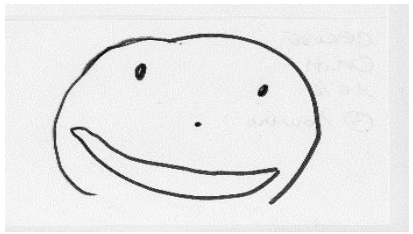
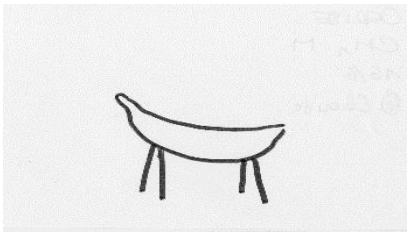
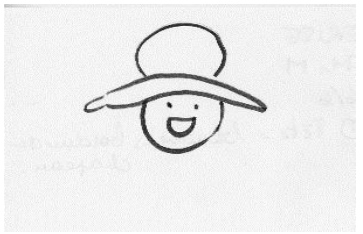
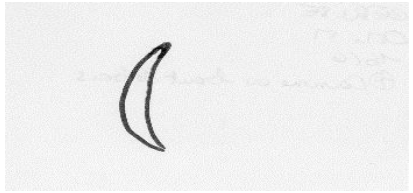
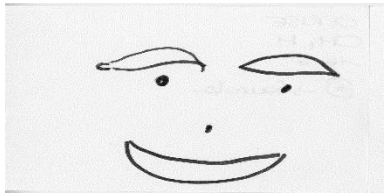
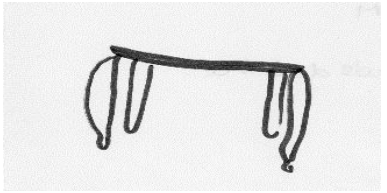
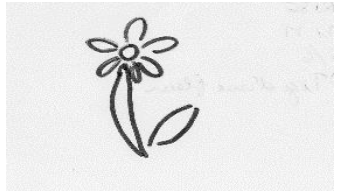
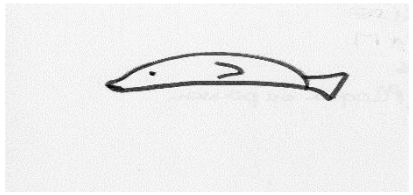
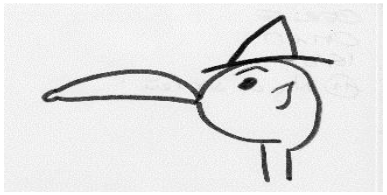


Creative Profiler - http://creativeprofiler.com/

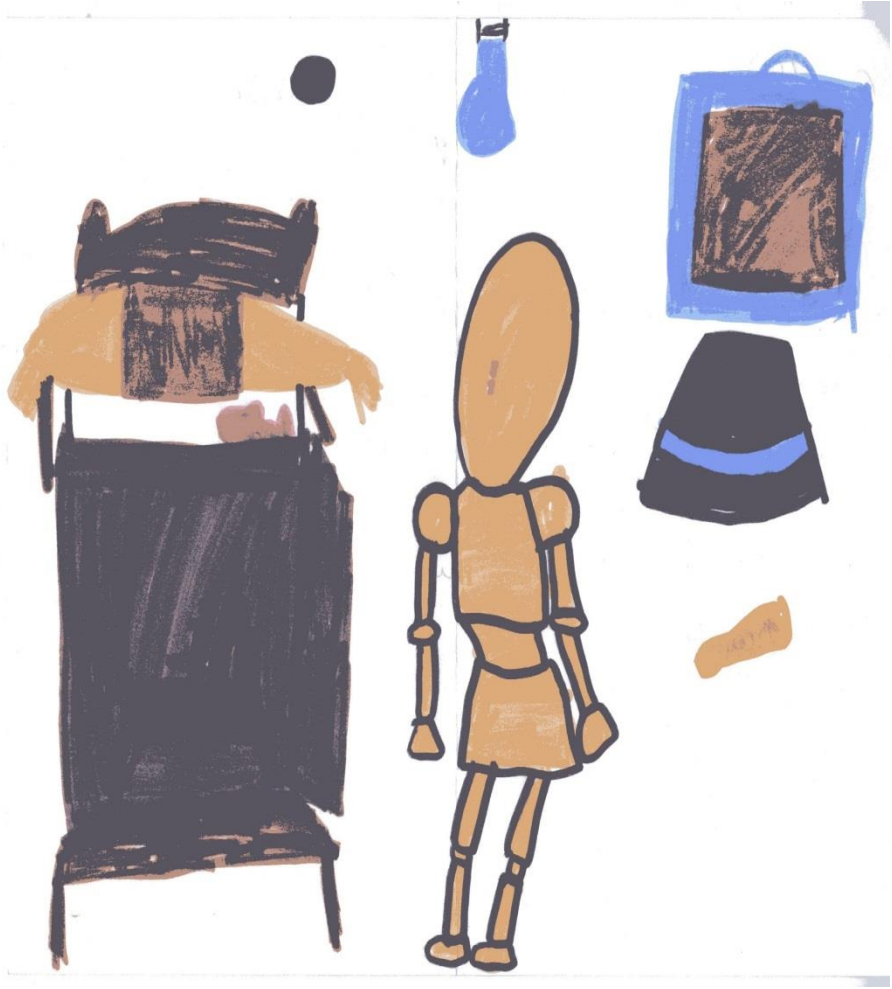
EPoC, a battery to evaluate creative potential (Lubart, Besançon, Barbot)

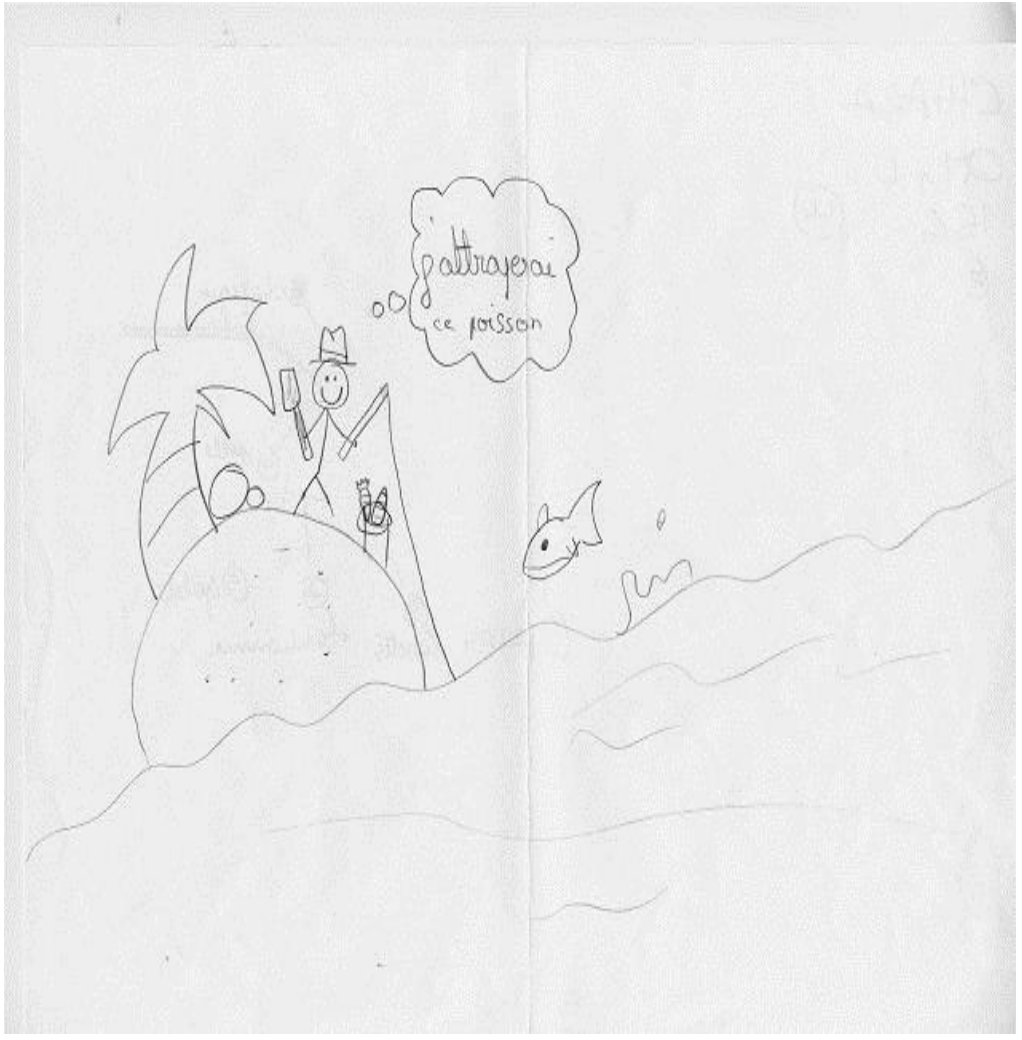
- Developed from 2000 – 2010, based on basic research on children's development of creative thinking.
- 2011: Artistic-graphic and Literary-Verbal domains normed on a French population.
- 2013+: Versions in English, Arabic, German, Turkish (and others under development: Slovenia, Croatia, Poland, Portugal, China…)
- 2015+: Extension to Social, Math, Science domains.
- 2015+: OECD research use in 10 countries.
- 2016+: Norms on adolescents, music and body-mouvement domains

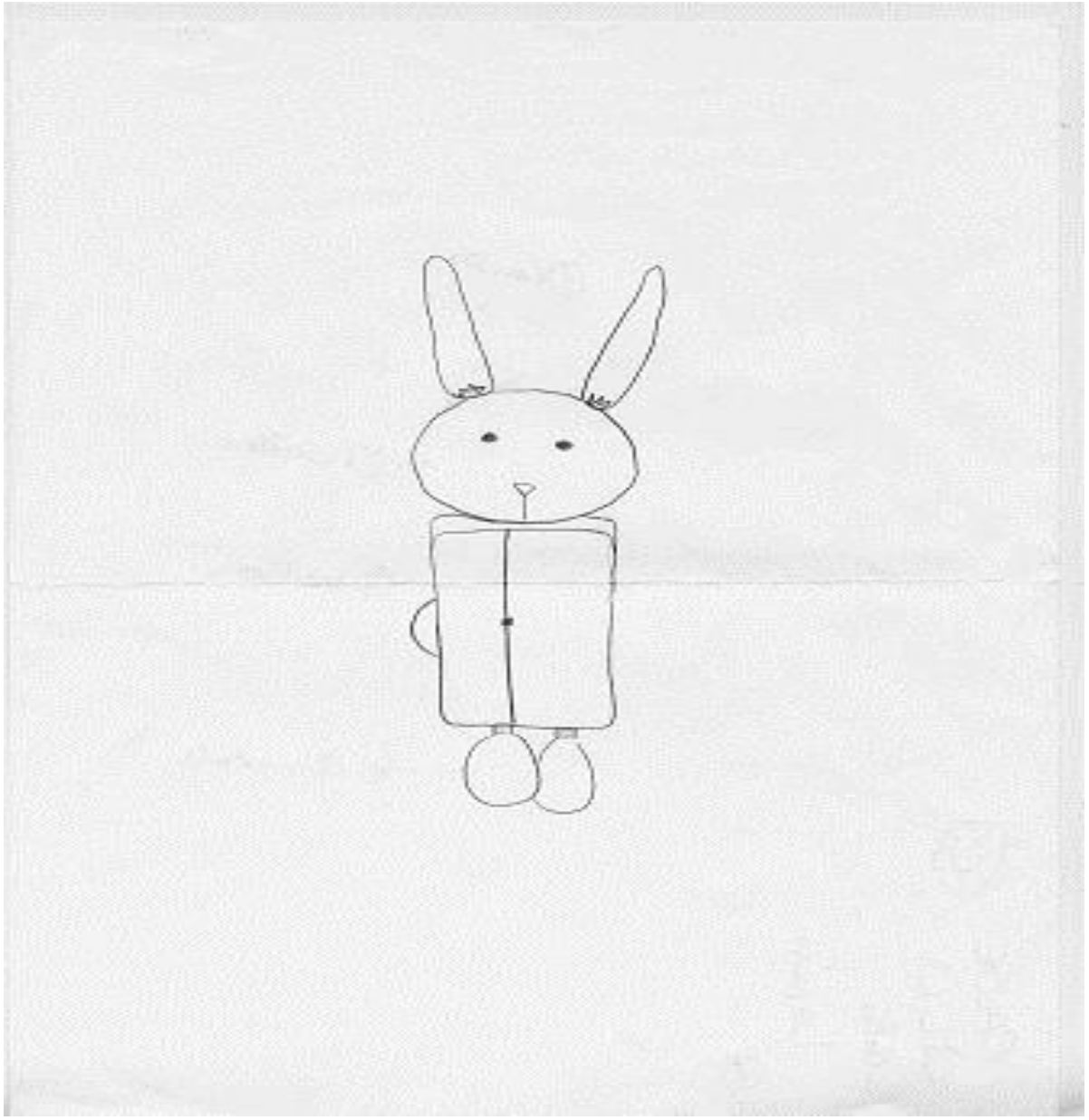
Examples of productions Divergent-exploratory

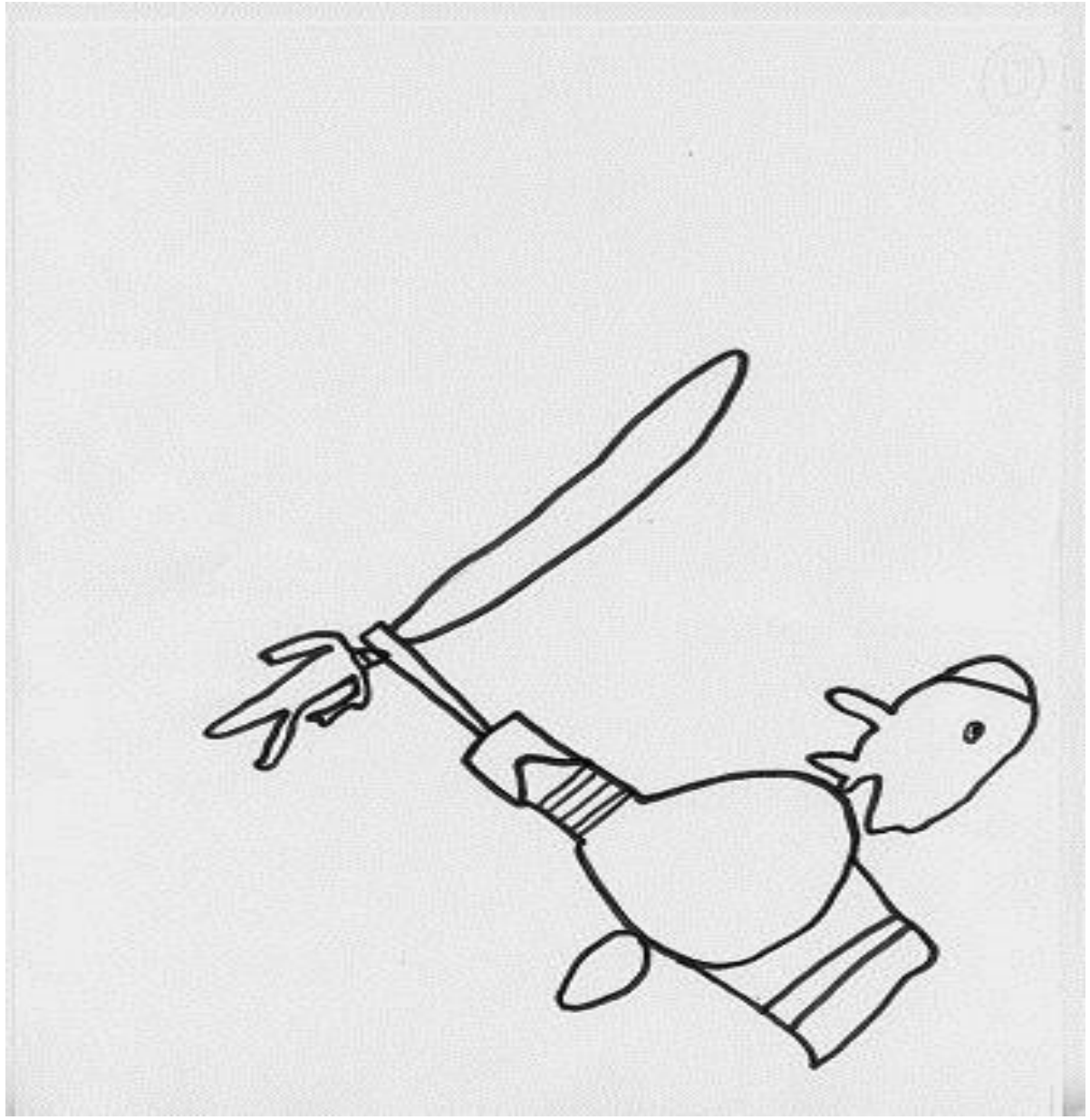











Examples of productions
Convergent - Integrative

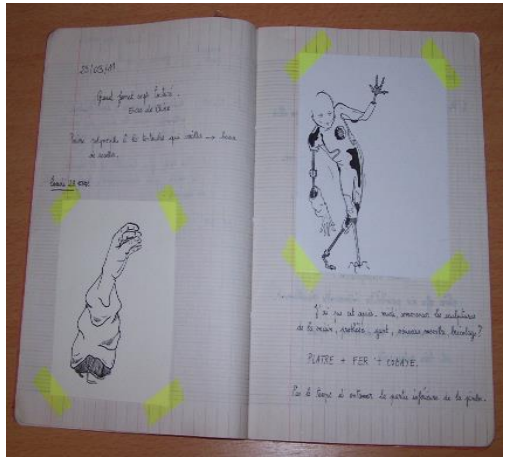


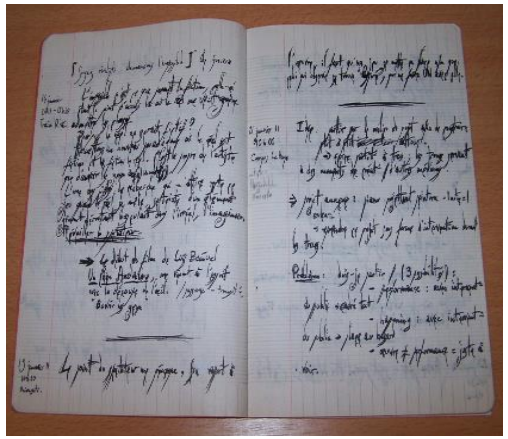




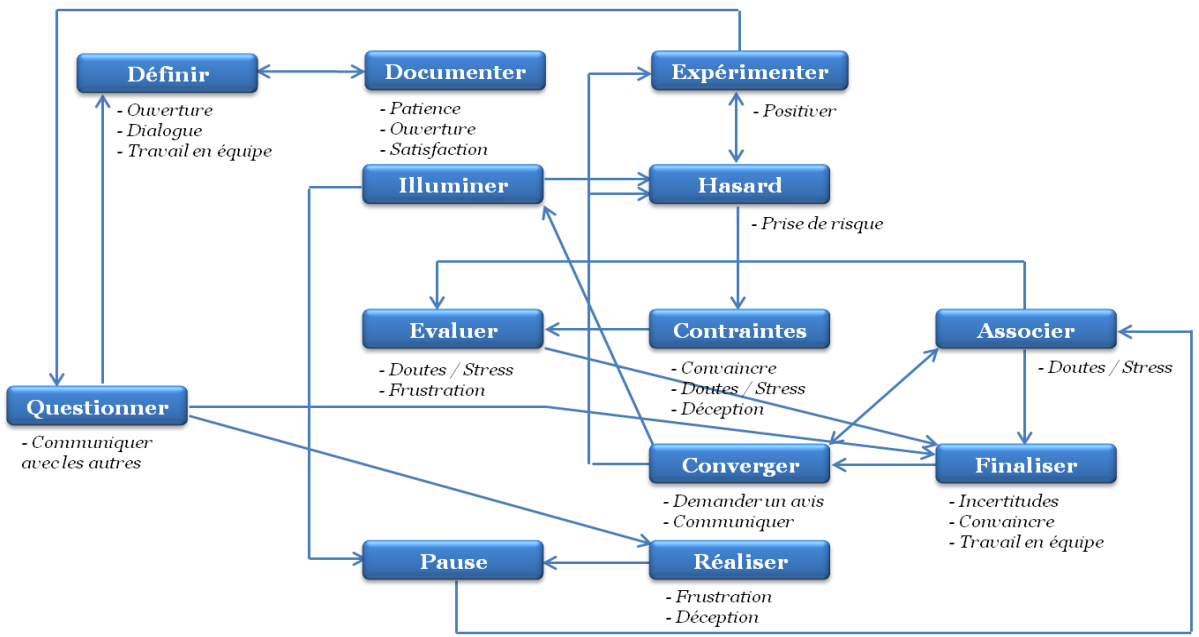


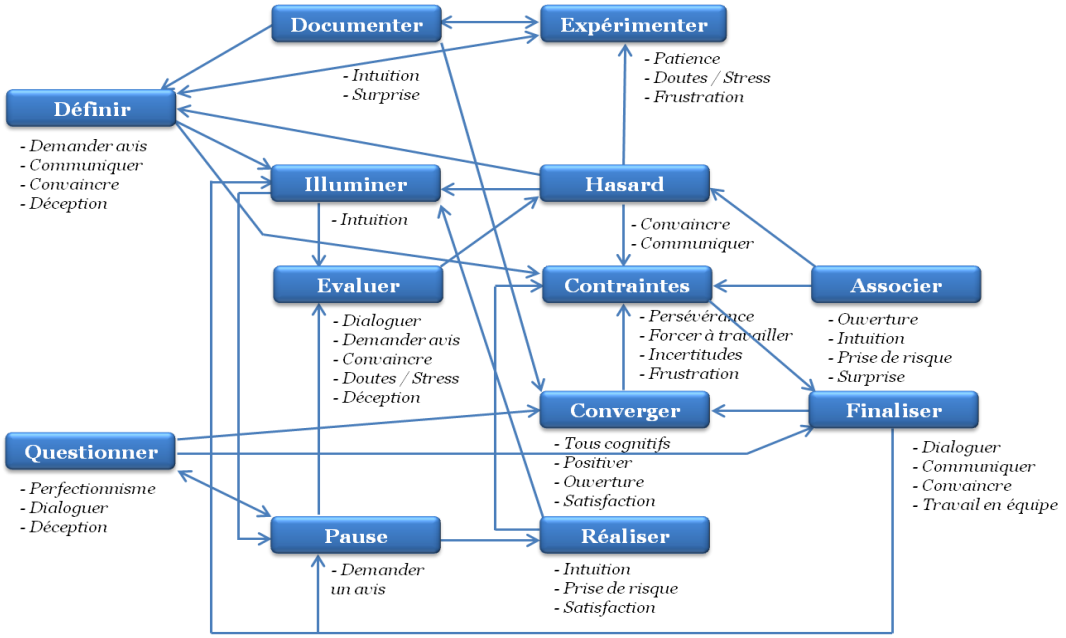
Creating





More creative artists





Less creative artists

Collaboration

•A study of 23 expert transportation designers, who collaborated with users. Critical Incident Technique (71 Critical incidents, 31+, 40-, individual differences modelling).

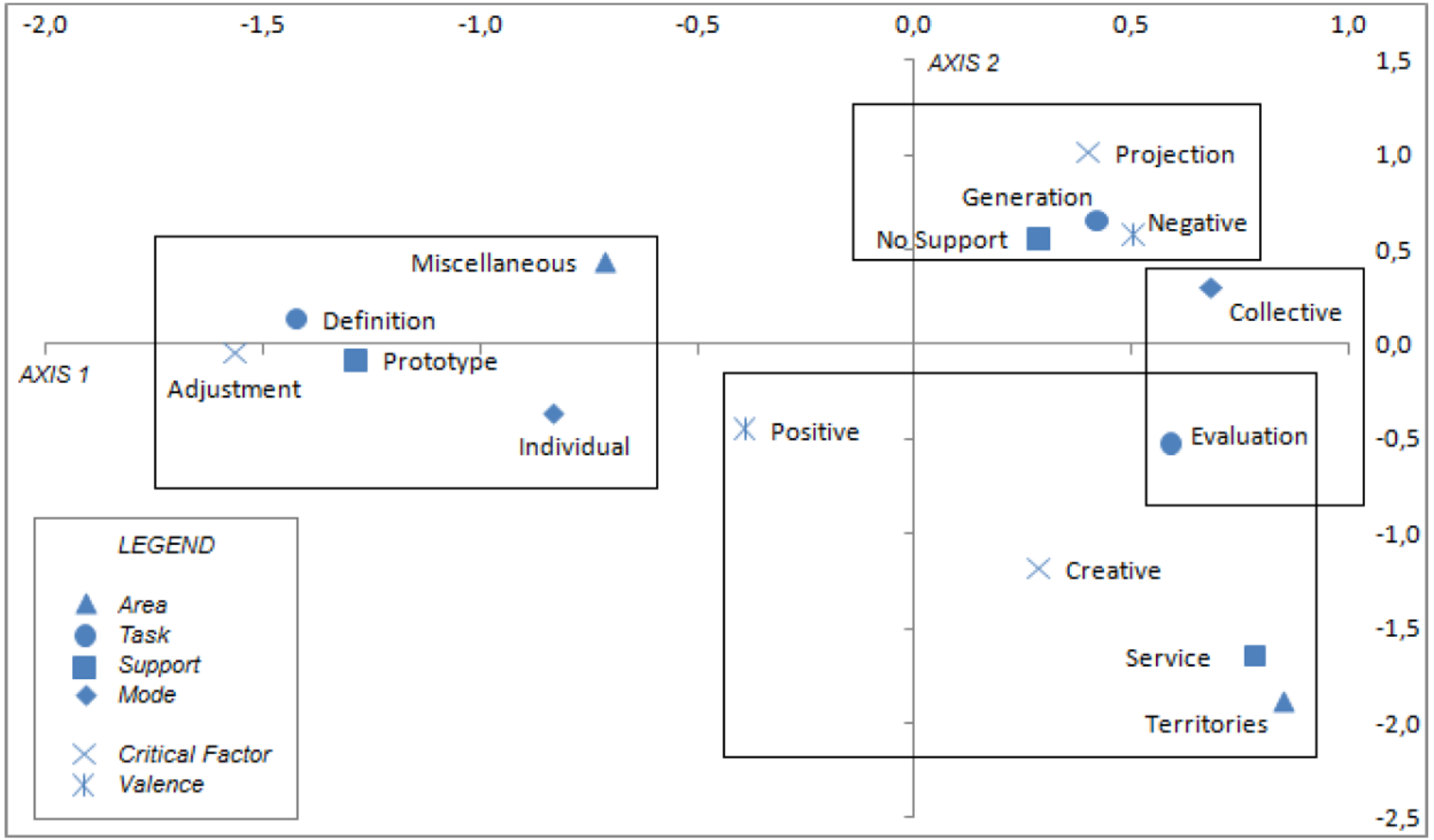


Figure 1: Distribution of the significant modalities of users' contribution in a two-dimensional plane

Context

Virtual workspaces (MUVE)

Brainstorming sessions in virtual and real environments

60 participants (VE: 22 female and 8 male; RE: 23 female and 7 male; 22±2.1 years)

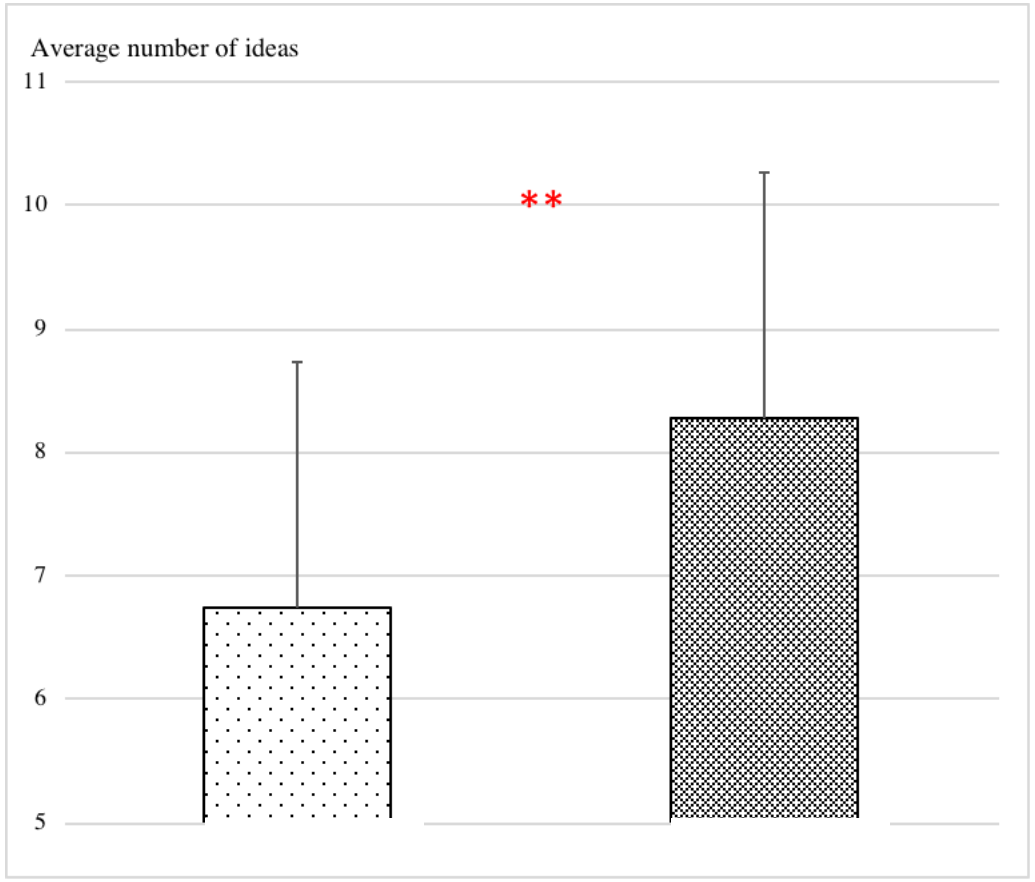
Brainstorming sessions in two conditions: a real meeting room (RE) and a similar meeting room in virtual environment (VE).

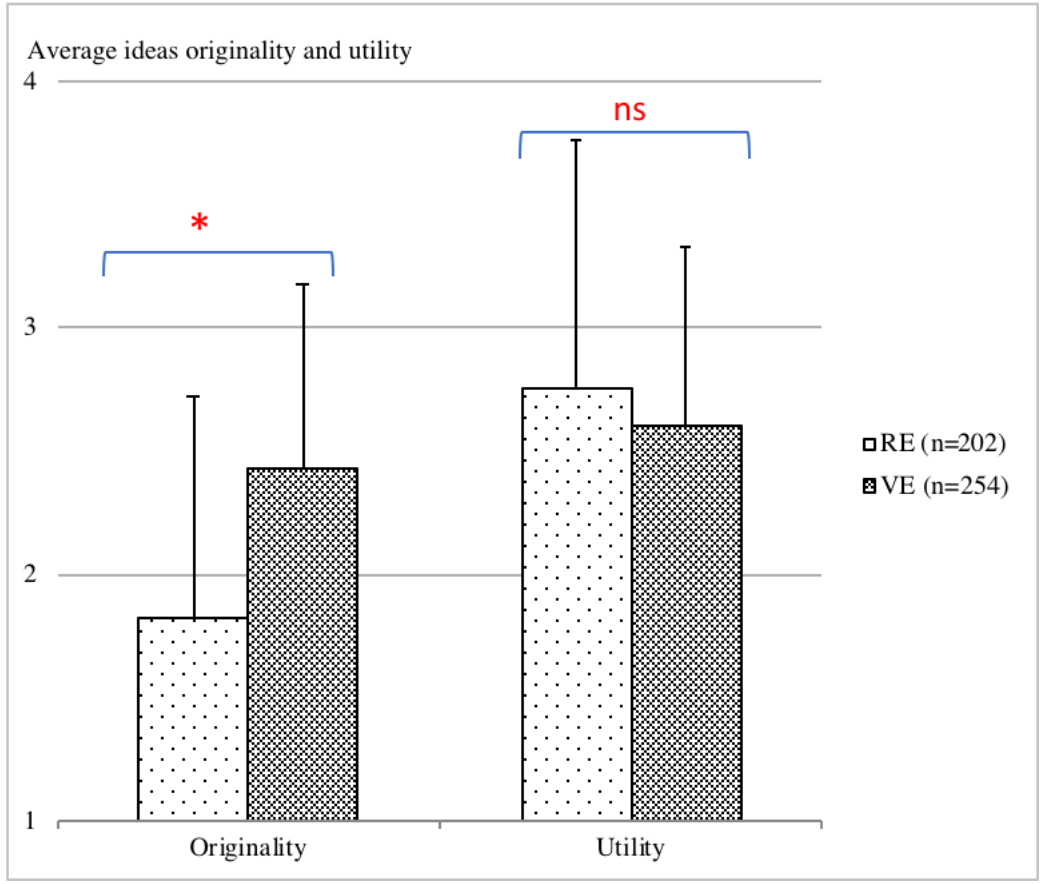
Task: brainstorming task for 10 minutes on how to improve mobility in Paris. 3 participants and 1 experimenter

Second Life, Neutral avatar

Creative profiler

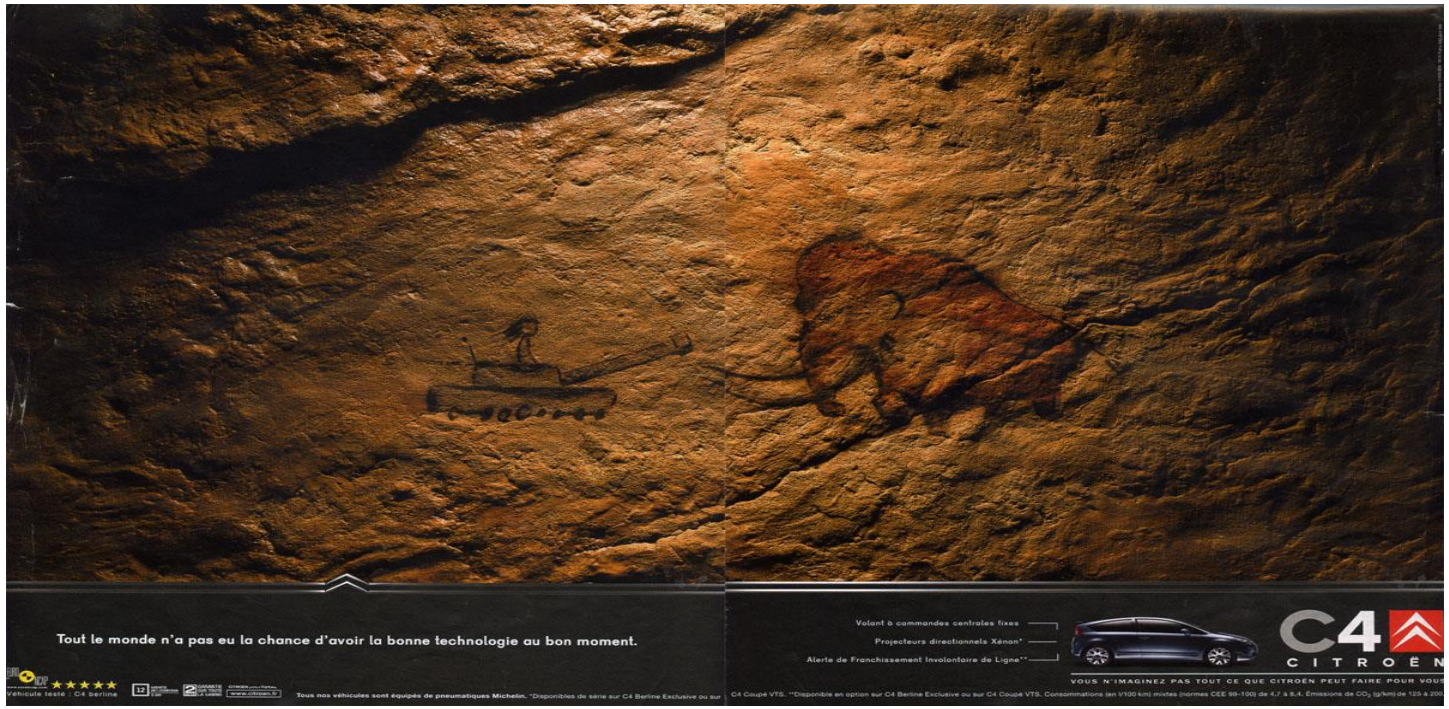
Creative performance: the average number of ideas (left) and originality and utility (right)





Creations

- **Subjects :** 32 Female & 21 Male; mean age: 28.5 years
  - Assessment of their creative capacity (divergent thinking)
- **Procedure :** 15 advertisements (differing on Originality and Appropriateness)
  - Groups were matched on gender, age, academic level, DT *Fluency*



Caroff & Besançon (2007)

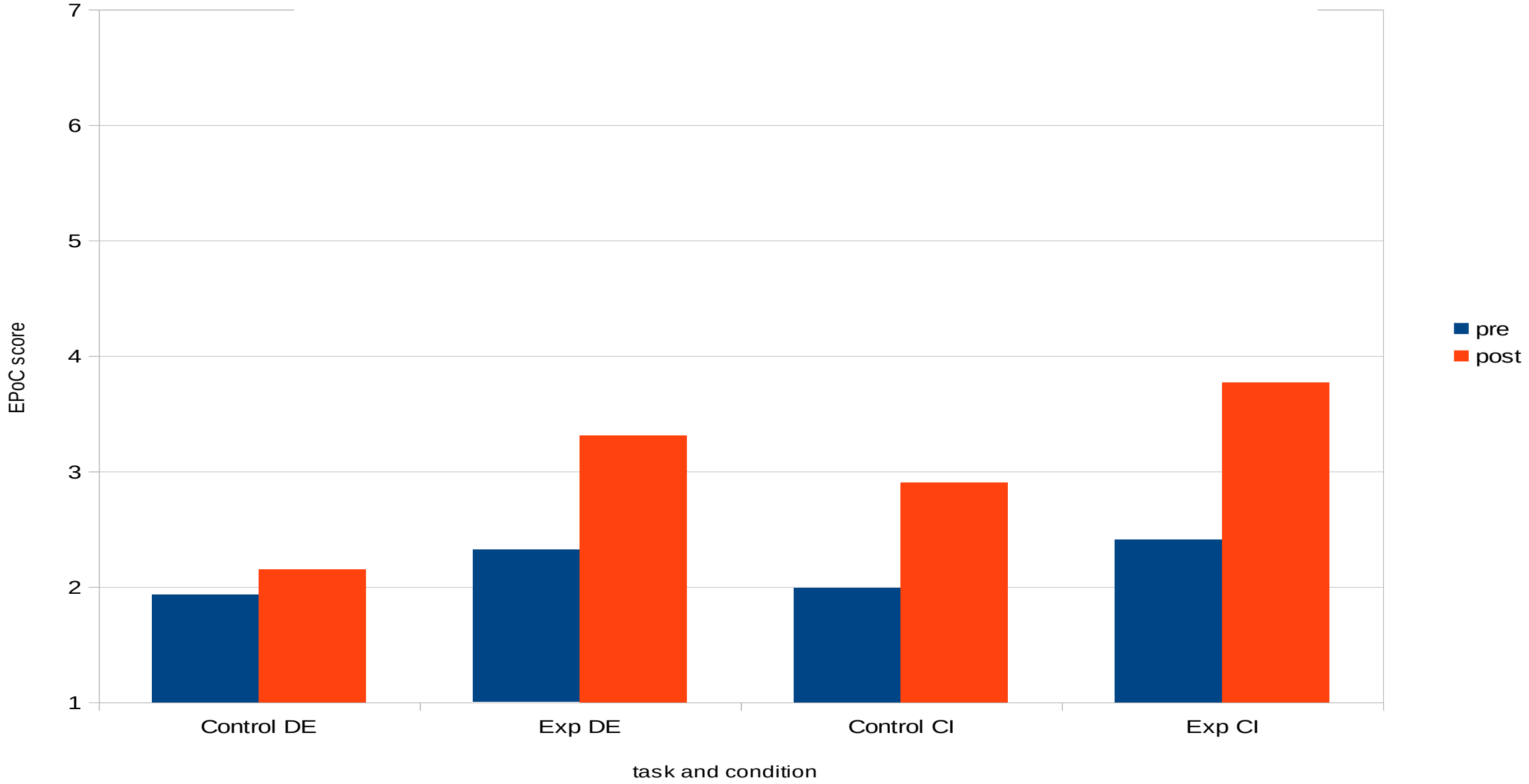
Consumption

Music clips		Integrative low	Integrative high	Integrative low	Integrative high
Divergent (Verbal)	Low	4.84 (2.97)	5.22 (2.72)	2.74 (2.18)	3.40 (2.30)
	High	4.63 (2.83)	5.58 (2.74)	1.96 (1.73)	3.16 (2.47)

N= 99 (mean age=14.4 years, sd=0.62), middle school students in Paris region; Rap/RnB, Pop/Rock, Jazz/Blues and Classical (satisfaction, 10 point scale)

Curricula

Pedagogical interventions in elementary schools



Summary of the main points

- Creativity: a conception with 7 Cs
- Research can be conducted on each “C”
- Work at the interfaces between C’s can be particularly fruitful

Thank you

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