Hallo,
Ik ben Pedro De Bruyckere!
(@thebandb)
Voorbije weekend nog:
Vandaag: feiten als basis voor fabels!
Disclaimer: ik geloof in onderwijs!
Disclaimer: ik geloof in lesgevers!
Beter:
we kennen het belang van leerkrachten!

(Hattie, 2009, 2012)
Veel docenten doen goed werk, maar soms op basis van foute theorieën.
• Amuses
• Over leren,
• Over multimedia,
• Over beleid,
• Hoe?
• Amuses
• Over leren,
• Over multimedia,
• Over beleid,
  • Hoe?
Prof. Mehrabian:
Is communicatie echt maar 7% verbaal?
“Unless a communicator is talking about their feelings or attitudes, these equations are not applicable.”

(Mehrabian zelf)
Wat zeggen we niet:
het non-verbale bestaat niet!
Maslow
Behoeftenhiërarchie van Maslow

1. Primaire biologische behoeften
2. Bestaanszekerheid
3. Sociale behoeften
4. Erkenning
5. Zelfontwikkeling
Wi-Fi

PHYSIOLOGICAL
Food Water Shelter Warmth

SAFETY
Security Stability Freedom from Fear

BELONGING - LOVE
Friends Family Spouse Lover

SELF-ESTEEM
Achievement Mastery Recognition Respect

SELF-ACTUALIZATION
Pursue inner Talent Creativity Fulfillment
WiFi

Battery Life

Physiological
- Food
- Water
- Shelter
- Warmth

Safety
- Security
- Stability
- Freedom from Fear

Belonging - Love
- Friends
- Family
- Spouse
- Lover

Self-Esteem
- Achievement
- Mastery
- Recognition
- Respect

Self-Actualization
- Pursue Inner Talent
- Creativity
- Fulfillment

Battery Life

WiFi
Een goed beeld doet geloven!

(Newman, et al., 2012)
Een goed beeld doet geloven!

(Newman, et al., 2012)
5% of what you hear
10% of what you read
20% of what you see
30% of what you see and hear
50% of what you discuss
75% of what you practice
90% of what you teach to others
Aka: the Loch Ness Monster of Education
Waar komt het vandaan
Wie bedacht het
Dale
Bale
Glaser
Glasser
National Training Laboratories  NTL
De vorm komt uit een van de oudeste theorieën over multimediaal leren.
Dale, E. (1969)
Niet helemaal fout eigenlijk
Maar:
De percentages???
Eerste echte onderzoek: 2007

Lalley and Miller, 2007
Conclusie: zorgwekkend fout.

Lalley and Miller, 2007
Stel je voor dat het correct zou zijn:

one size fits all
Heb je dan nog lesgevers nodig?
• Amuses
• Over leren,
• Over multimedia,
• Over beleid,
  • Hoe?
Geef me 10000 uren...
Je wordt beginner in 50 tot 100 uren.
Je wordt expert in 8 tot 10 jaar.
(+/- 10.000 uren)
Is dat dan 10.000 uren? Nee!

(oa Macnamara et al, 2014)
Enorme verschillen!
3-YEAR-OLD TOPS IQ TEST AT +160
GIRL YOUNGEST IN ARIZONA TO BE ACCEPTED INTO MENSA
Some people will never learn...
Zelf ontdekt doet langer onthouden?
Figure II.7.2  *Factors associated with science performance*

*Multilevel regression models of education systems, schools and students*

<table>
<thead>
<tr>
<th>Negative association with science scores</th>
<th>Positive association with science scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student’s socio-economic profile*</td>
<td>Index of adaptive instruction</td>
</tr>
<tr>
<td>School’s socio-economic profile*</td>
<td>Index of teacher-directed instruction</td>
</tr>
<tr>
<td>Student is required to attend at least one science course</td>
<td>Index of disciplinary climate in science lessons (student)</td>
</tr>
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</tr>
<tr>
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<tr>
<td>Pre-primary attendance, years</td>
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<tr>
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<td>Index of school autonomy</td>
</tr>
<tr>
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<tr>
<td>Index of educational leadership</td>
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</tr>
<tr>
<td>Residence considered for school admission</td>
<td>Residence considered for school admission</td>
</tr>
<tr>
<td>Student attends a private school</td>
<td>Student attends a private school</td>
</tr>
<tr>
<td>Index of student behaviour hindering learning</td>
<td>Index of student behaviour hindering learning</td>
</tr>
<tr>
<td>Student skipped a school day*</td>
<td>Student skipped a school day*</td>
</tr>
<tr>
<td>Student arrived late for classes*</td>
<td>Student arrived late for classes*</td>
</tr>
<tr>
<td>Index of enquiry-based instruction</td>
<td>Index of enquiry-based instruction</td>
</tr>
<tr>
<td>Student is a girl</td>
<td>Student is a girl</td>
</tr>
<tr>
<td>After-school study time* hours</td>
<td>Index of perceived feedback</td>
</tr>
<tr>
<td>Student had repeated a grade at least once</td>
<td>Student had repeated a grade at least once</td>
</tr>
</tbody>
</table>

1. The socio-economic profile is measured by the PISA index of economic, social and cultural status (ESCS).
2. In the two weeks prior the PISA test.
3. Includes homework, additional instruction and private study.

Notes: All variables have been introduced jointly in a three-level regression model. Statistically significant coefficients have associated z-scores below -1.96 or above 1.96. The z-scores for ‘all countries and economies’ are generally lower because the uncertainty surrounding the relationships is significantly higher. See Table II.7.1. for results by education system. Factors are ranked in descending order of the z-scores for OECD countries.

Source: OECD, PISA 2015 Database.

[SciteLink](http://dx.doi.org/10.1787/888933436455)
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</tr>
<tr>
<td>Student skipped a school day(^2)</td>
<td></td>
<td></td>
</tr>
<tr>
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<td></td>
<td></td>
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### Figure II.7.2 - Factors associated with science performance

Multilevel regression models of education systems, schools and students

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<th>Category</th>
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<th>OECD countries</th>
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Oops!

Waarom?
De grootste invloed op leren... is voorkennis!
Het sensorisch en werkgeheugen als een spamfilter.
Belang van concreet!
Belang van herkenning!
Maar voorkennis is niet synoniem met intelligentie.
Belang van scaffolding
Link tussen instructie en prestatie kloof  

(Hattie & Yates, 2013)
“For instance, several studies have found that low ability students will prefer discovery learning lessons to direct-instruction-based lessons, but learn less from them. Under conditions of low guidance, the knowledge gap between low and high ability students tend to increase. The lack of direct guidance has greater damaging effects on learning in low ability students especially when procedures are unclear, feedback is reduced, and misconceptions remain as problems to be resolved rather than errors to be corrected.”

(Hattie & Yates, 2013)
Cruciaal hier: basiskennis versus diepgaander toepassen!
Dus eenmaal basiskennis aanwezig: ja!
Van begeleid tot zelfstandig!
Zelf voorbeelden eerst samen doen.
“Guided discovery”
• Amuses
• Over leren,
• Over multimedia,
• Over beleid,
• Hoe?
Kennisnet vorig jaar: tablets = meerwaarde

(Kennisnet, 2016)
Maar?
OESO 2015?

'Scholieren presteren niet beter met computer'
Technologie en de OESO?
Correlatie versus causaal verband
Stop met investeren!
Stop met acteren!

Number of people who drowned by falling into a pool correlates with Films Nicolas Cage appeared in

Correlation: 56.6% (r=0.666004)

Data sources: Centers for Disease Control & Prevention and IMDb Movie Database

nybrjgon.com
Eet meer chocolade!
Zelfs bij negatief causaal verband opletten!
Eerste wet van Kranzberg:
Technology is neither good nor bad - nor is it neutral.
Feit versus fabel?
Niet leerstijlen.
Zeer populair, zelden bewezen!

Leercyclus van Kolb

(Coffield, Moseley, Hall, & Ecclestone, 2004)
Nog erger
differentiëren volgens leerstijl:
nauwelijks effect!

(Hattie, 2009, 2012)
Vermunt minder problematisch: leerstrategie!
Wel “dual channel theory”

Clarck & Mayer, 2011
Toepassing van dual channel theory
Woord (print of geluid) + beeld = goed

Clarck & Mayer, 2011
Woord (print én geluid) + beeld = fout

Clarck & Mayer, 2011
Hoe maak je slides?
K.I.S.S.
(Keep it simple, stupid)

Clarck & Mayer, 2011
Dus niet:
**MADE to STICK**

**SUCCESSs Model**

A sticky idea is understood, it's memorable, and it changes something. Sticky ideas of all kinds range from the "Yuck Factor," everything associated to JFK's "Man on the Moon" speech, to six traits in common: If you make use of these traits in your communicatons, you'll make your ideas stickier. (You don't need all 6 to have a sticky idea, but it's fun to say the more, the better!)

**PRINCIPLE 1**

**SIMPLE**

Simplicity isn't about dumbing down, it's about prioritizing something smart. (Think Steve Jobs.) What's the core of your message? Can your content be simplified? Ask your audience to put their hands up if they can't imagine the core of your message.

**PRINCIPLE 2**

**UNEXPECTED**

To get remember, think of a schema. (Think of a pyramid.) To hold attention, in unexpected ways. (Think of the famous pyramid.) Remember the Velcro theory of memory—try to break into multiple types of memory.

**PRINCIPLE 3**

**CONCRETE**

To be concrete, use sensory language. (Think about colors or smells.) Bring a mental picture. (A boat on the ocean.) Remember the Velcro theory of memory—try to break into multiple types of memory.

**PRINCIPLE 4**

**CREDIBLE**

Meaning comes from emotional language. (Think about emotions or stories.) Bring a mental picture. (A boat on the ocean.) Remember the Velcro theory of memory—try to break into multiple types of memory.

**PRINCIPLE 5**

**EMOTIONAL**

People care about people, not numbers. (Think about your own emotions.) Bring a mental picture. (A boat on the ocean.) Remember the Velcro theory of memory—try to break into multiple types of memory.

**PRINCIPLE 6**

**STORIES**

Stories drive action through simulation. (What to do and inspiration are inseparable.) (Think about stories.) Bring a mental picture. (A boat on the ocean.) Remember the Velcro theory of memory—try to break into multiple types of memory.
Ietsje beter:

Savvy Learning & Teaching

Story

Emotion

Credible

Concrete

Expected

Simple
Link met Universal Design?
7 PRINCIPLES OF UNIVERSAL DESIGN:

- Equitable
- Flexibility
- Simple & intuitive
- Perception information
- Tolerance for error
- Low physical effort
- Size & space
Universal Design for learning?
Universal Design for Learning Guidelines

I. Provide Multiple Means of Representation
1. Provide options for perception
   1.1 Offer ways of customizing the display of information
   1.2 Offer alternatives for auditory information
   1.3 Offer alternatives for visual information

2. Provide options for language, mathematical expressions, and symbols
   2.1 Clarify vocabulary and symbols
   2.2 Clarify syntax and structure
   2.3 Support decoding of text, mathematical notation, and symbols
   2.4 Promote understanding across languages
   2.5 Illustrate through multiple media

3. Provide options for comprehension
   3.1 Activate or supply background knowledge
   3.2 Highlight patterns, critical features, big ideas, and relationships
   3.3 Guide information processing, visualization, and manipulation
   3.4 Maximize transfer and generalization

II. Provide Multiple Means of Action and Expression
4. Provide options for physical action
   4.1 Vary the methods for response and navigation
   4.2 Optimize access to tools and assistive technologies

5. Provide options for expression and communication
   5.1 Use multimedia for communication
   5.2 Use multiple tools for construction and composition
   5.3 Build fluencies with graduated levels of support for practice and performance

III. Provide Multiple Means of Engagement
7. Provide options for recruiting interest
   7.1 Optimize individual choice and autonomy
   7.2 Optimize relevance, value, and authenticity
   7.3 Minimize threats and distractions

8. Provide options for sustaining effort and persistence
   8.1 Heighten salience of goals and objectives
   8.2 Vary demands and resources to optimize challenge
   8.3 Foster collaboration and community
   8.4 Increase mastery-oriented feedback

9. Provide options for self-regulation
   9.1 Promote expectations and beliefs that optimize motivation
   9.2 Facilitate personal coping skills and strategies
   9.3 Develop self-assessment and reflection

Resourceful, knowledgeable learners
Strategic, goal-directed learners
Purposeful, motivated learners
Mooie filosofie!
Maar waarschuwing: het Mentos probleem.
Perfect als je dorst hebt!
Perfect tegen slechte adem!
Maar samen?
Didactische voorbeeld van het Mentos-probleem?
Dual channel theory
• Amuses
• Over leren,
• Over multimedia,
  • Over beleid,
    • Hoe?
Dit weekend: jongensprobleem
Of ook: vervrouwelijking onderwijs
Bij onderwijs (beleid): vaak complexer
Bij onderwijs(beleid): vaak genuanceerder
Bij onderwijs (beleid): vaak Mattheus-effect
Bijvoorbeeld: meer tijd.
• Amuses
• Over leren,
• Over multimedia,
• Over beleid,
  • Hoe?
4 taken volgens Daniel Willingham:
1. Strip it & flip it
Strip it:
Heb je “brein” nodig voor de claim?
Onderontwikkelde prefrontale cortex = Kinderen zijn soms impulsief

(Willingham, 2012)
Bij gamen komt dopamine vrij

= 

Kinderen houden van video games.

(Willingham, 2012)
Het jonge brein is zeer plastisch
= Jonge kinderen leren veel.

(Willingham, 2012)
Strip it is ook:
Breng terug tot de essentie:
Als ik X doe,
bestaat er een kans van Y procent
dat Z zal gebeuren.
Flip it:
90% vetvrij versus bevat 10% vet
Leerstijlen?
Buikgevoel omdraaien:
<table>
<thead>
<tr>
<th>Het</th>
<th>gevaar</th>
<th>van</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hokjes</td>
<td>denken</td>
<td></td>
</tr>
</tbody>
</table>
Flip it is ook:
Wat is het resultaat als ik X niet doe?
2. Trace it
Wie zegt het?
Wat zeggen anderen?
Belangrijke tip:
Geloof nooit iemand op zijn woord.
Zwakste bewijs? Autoriteit!
“Living online is changing our brains. There is an increase in people with autistic spectrum disorders.”

Prof. Susan Greenfield
“Where is the evidence?”

Dorothy Bishop
Professor of Developmental Neuropsychology
Ik zie dus ook geen reden om *mij* zomaar te geloven!
3. Analyze it
Wees streng voor waar je in gelooft.
Geldt ook voor Evidence-Based Education.
Kijk voorbij een cijfer.
John Hattie:
- Zomervakantie ($d = -.09$)?
- Klasgrootte ($d = .21$)?
Tip 2: negeer getuigenissen.
Zelfs als het van zeer bekende namen zijn:

**Bill Clinton - 42nd President of the United States of America**

Taibi Kahler is a genius. He knows more about personality dynamics than anyone I know in the world. You have been a good friend and helpful advisor. I'll certainly let appropriate people know about your company when I see an opportunity. I'm sure there are many out there who would benefit from your expertise.

**Bodil Sonesson-Gallö - Vice President Axis Communications**

I have participated in several Process Communications seminars that we have organized for our European management team. It has been a very positive experience giving a common language for the (multilingual) group. The knowledge how to communicate with different individuals is essential for marketing and sales people. What has brought me the most value is how to handle people under stress depending on their personality. It has been useful in many situations. I have also had many funny moments when people have started to recognize themselves in the personality types of Process and Communications.

**Franck Issan, Account manager, Avaya company**

In 2005 I attended a Process Communication seminar with Gérard Collignon and I gathered precious advice. In my job, it is essential to maintain extended relationships with our 'Key accounts' and to listen to my contacts in these companies. I know it is frequently said yet it is true, why communication is not taught in schools! I discovered there attending to people's psychological needs is key to maintaining an extended relationship with my customers and contacts. In practice I have found that with a Thinker base or phase customer I show on my enthusiasm for his competencies and when I have to deal with a bad debtor who
4. Should I do it?
Je kan niet alles doen!
Er is dus per definitie keuze!
$3^{15^2}$ or 205 trillion opties

Daarom epiloog:
Wat heb ik niet gezegd:
Geef saai en eentonig les.

Wel: varieer in werkvormen, wees concreet.
Mensen verschillen niet,

Wel:
Niet qua leerstijl, wel in interesses.
Stoppen met zoeken en proberen?

Wel:
Nog veel te ontdekken.
Dank!