



**Erfinder
für Kinder**

It's your turn!

***Psychological reasons
for you to unlock the
potentials of game
based learning***

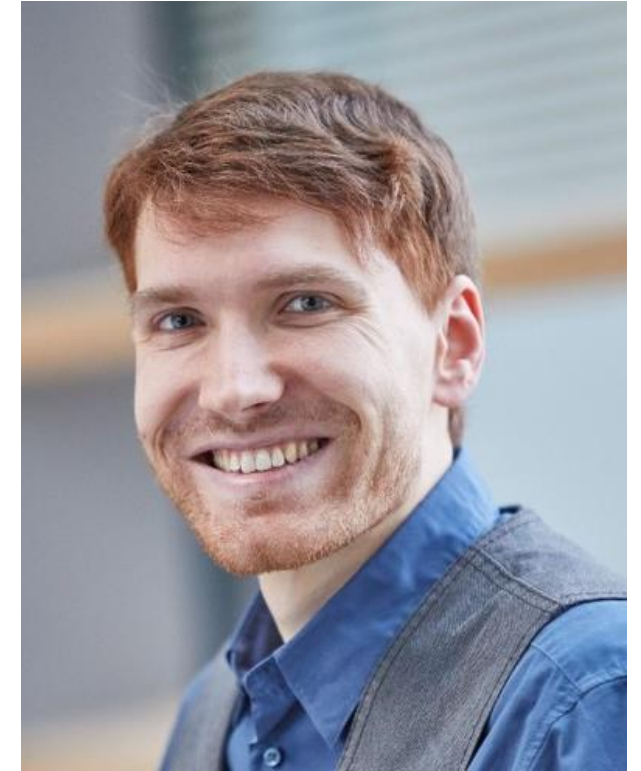


Redakteur Spiel und Buch / Produktmanager **HABA** Learning Program

the game curriculum

Dr. Jan-David Freund

- studies in Psychology (Psychology, Early Childhood Education, Sociology, Philosophy, Computer Sciences)
- PhD in the field of developmental psychology with research on child development, early childhood education, and the quality of institutional and home learning environments
- main tasks at HABA:
 - management and advance of HABA Learning Program
 - consulting and expertise on game based learning in every step of product development

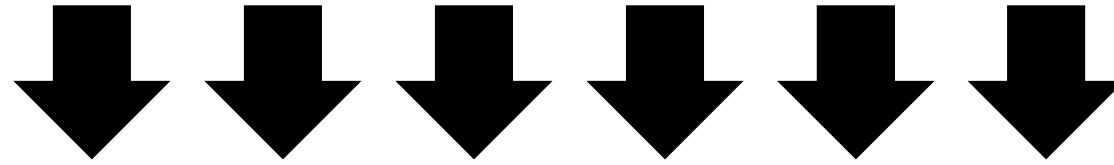


Some good reasons for Learning by Playing

- Positive emotions make learning by playing very efficient.
- The connected knowledge learned by playing is easy to remember.
- By playing children learn in a motivated, focused, and persevering way.
- Learning by playing connects abstract knowledge and everyday life.
- Learning by playing makes children self-confident and grow beyond themselves.
- Learning by playing is ideal for fostering self-regulation skills.
- Playing fosters the social-emotional skills of all children.
- Learning by playing provides the perfect balance between stimulation and active recreation.
- ...



~~—Good games bring the **fun** into the **learning**!—~~



Good games bring the **learning** into the **fun**!



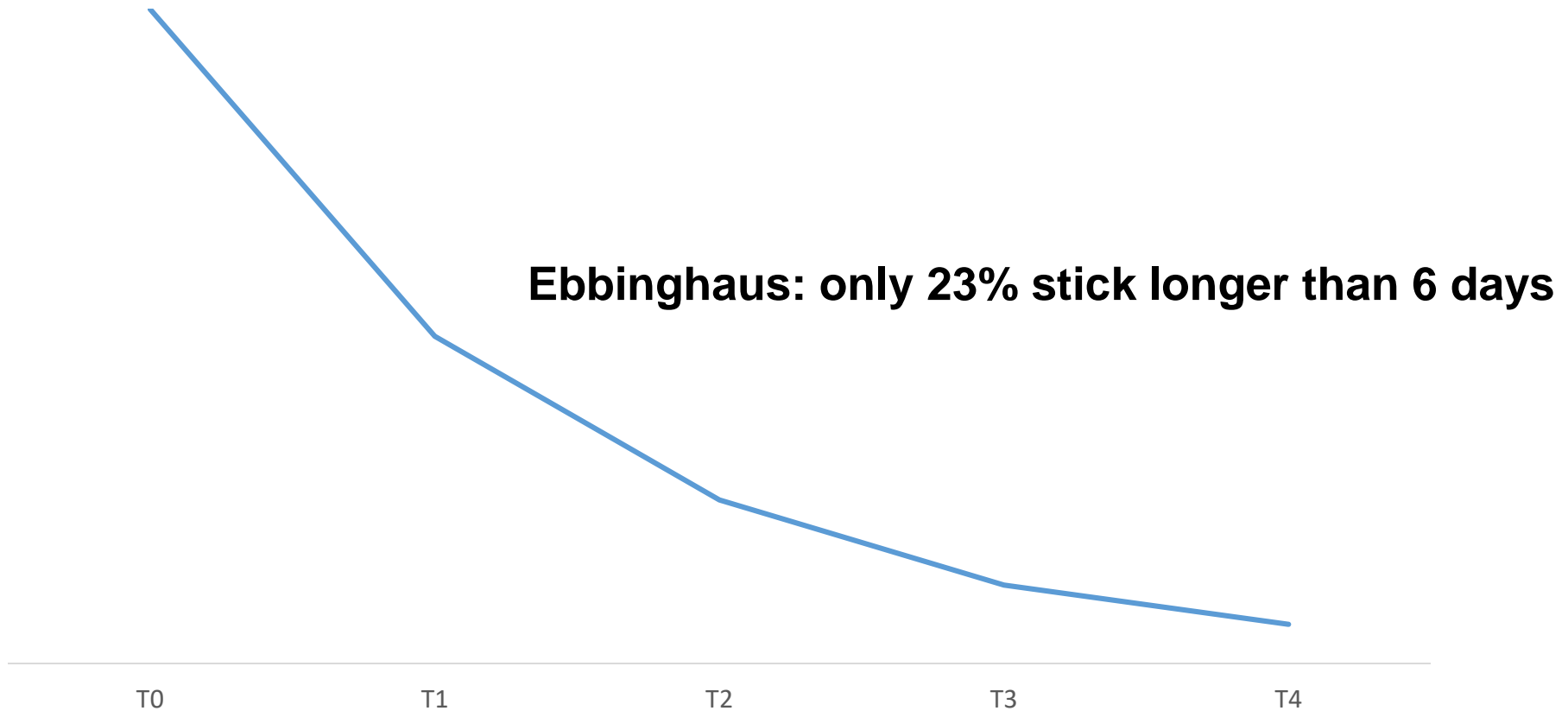
THE TASK

1 hour to learn

remember the learned for as long as possible

how?

Learning in 1 hour of focused rehearsal



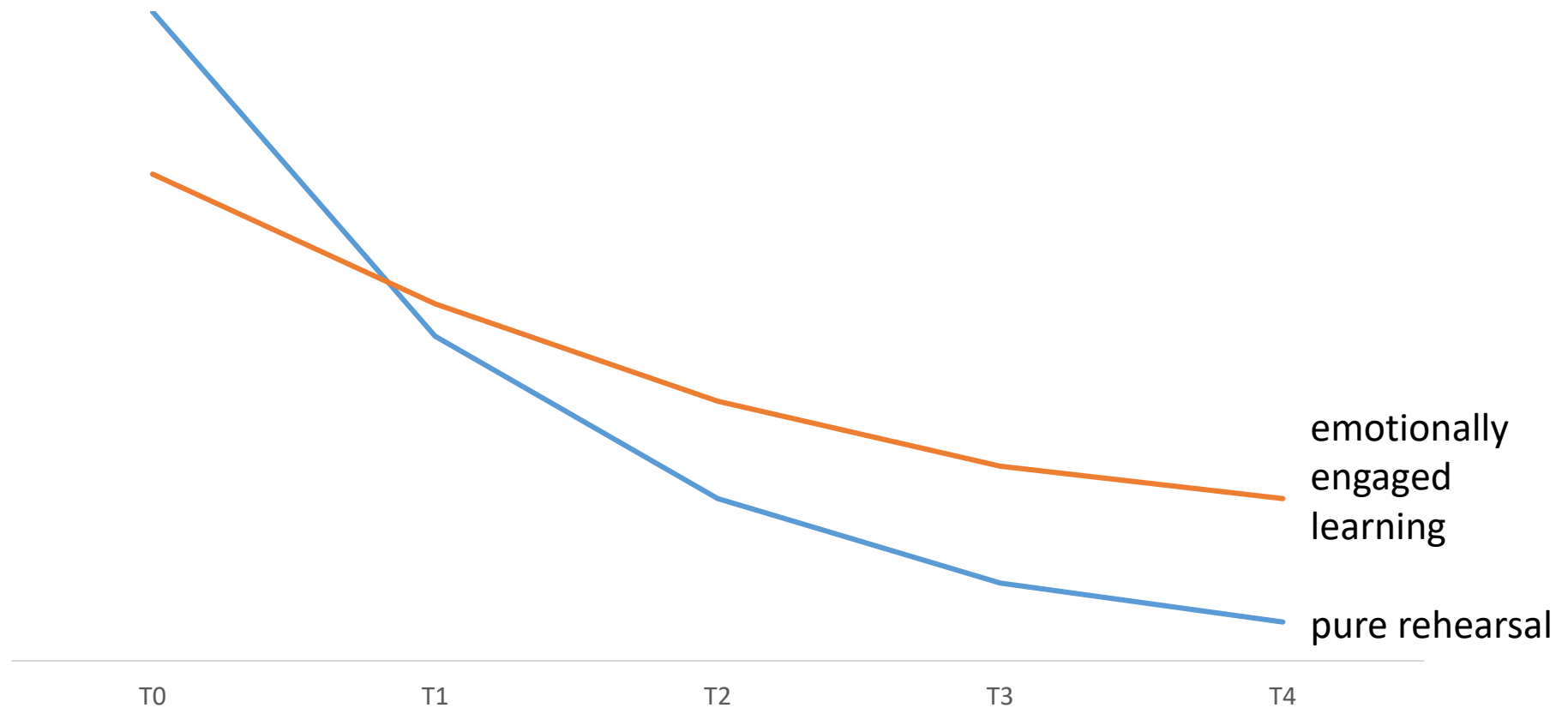
Which memory is more vivid?

What were your working tasks at your very first day at your current job?

What were your working tasks at the 2nd day after this year's new-year-holidays?

What is the difference between these two situations? **Emotional engagement!**

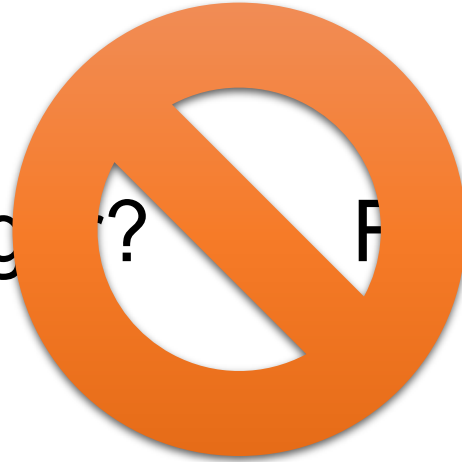
Effectiveness of learning depends on emotional engagement



Effectiveness of learning depends on emotional engagement

We need **strong** emotions, right?

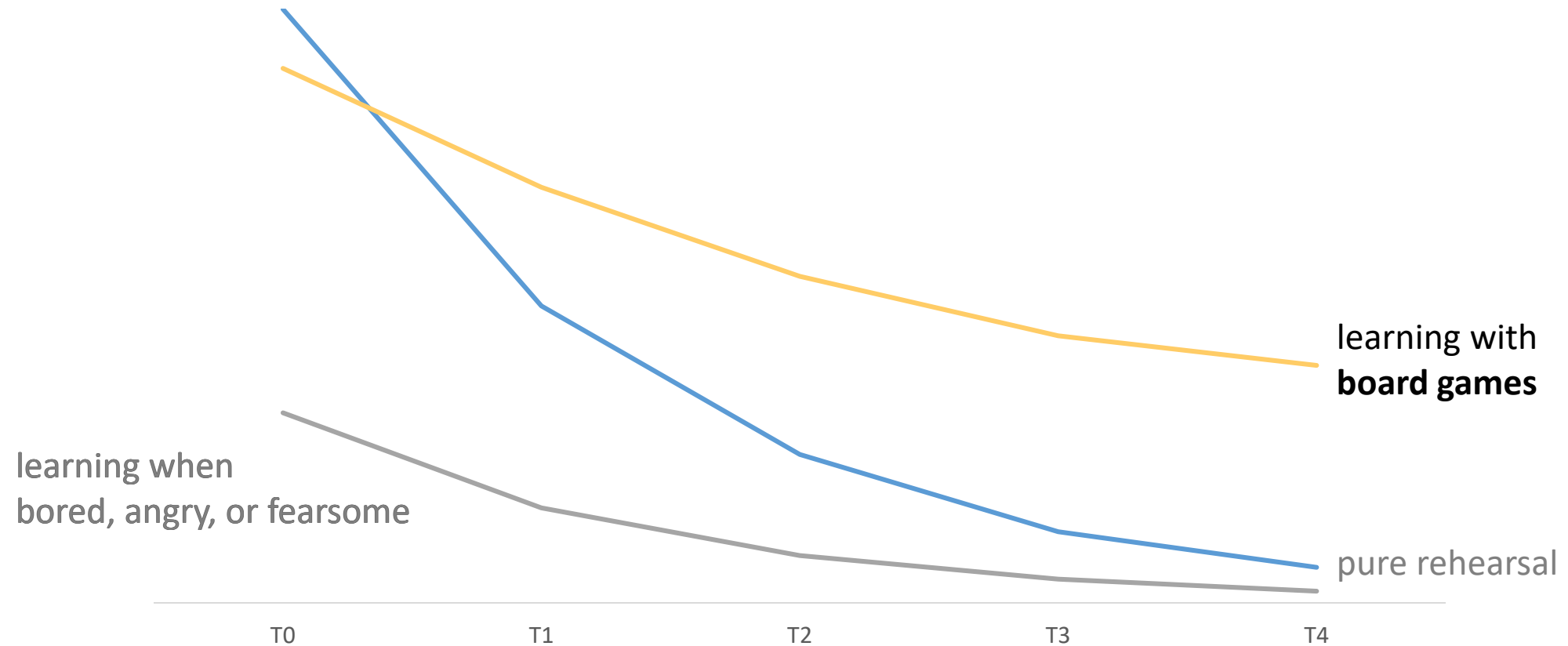
How about... Anger? Fear? Joy & Excitement



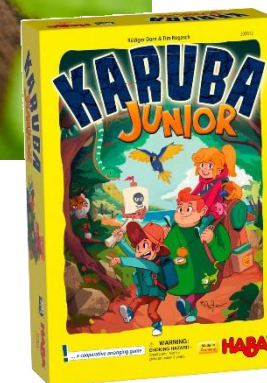
Negative emotions block our openness to new information.

We need positive emotions!

Effectiveness of learning depends on emotional engagement



Playing games → joy & excitement

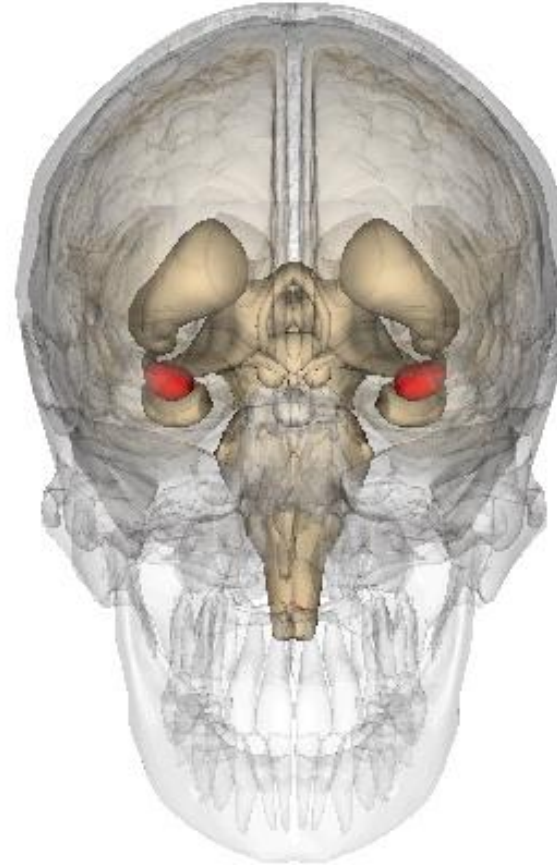


Jan-David Freund: *It's your turn!* – Psychological reasons for you to unlock the potentials of game based learning



Positive emotions make learning by playing very efficient!

for more insights
search for
„Amygdala“ and
memory



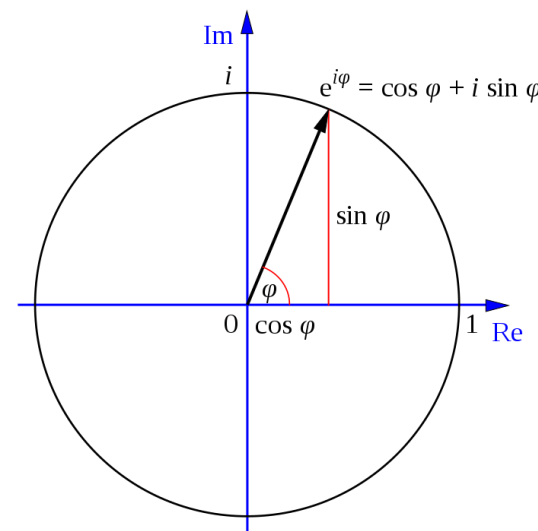
How to grasp abstract knowledge?

Many fields of knowledge are abstract and detached from children's real life.

They are stream-lined for precise expert communication and not for learning.

Even with the help of positive emotions this makes many learning contents hard to grasp for children.

$$\xi(x) = \prod_p \frac{p^x}{p^x - 1}$$
$$H_n = 1 + \frac{1}{2} + \frac{1}{3} + \dots + \frac{1}{n}$$



$$\frac{d}{dz} \ln \xi \left(\frac{z}{z-1} \right) = \sum_{n=0}^{\infty} \lambda_{n+1} z^n.$$

$$e^{i\infty} = \cos \infty + i \sin \infty$$

$$e^{i\pi} = \cos \pi + i \sin \pi$$

$$e^{i\pi} = (-1) + (0)$$

$$\boxed{e^{i\pi} + 1 = 0}$$

An example

1: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10

2: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20

3: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30

...

7: 7, 14, 21, 28, 35, ??, 49, 56, 63, 70

Children are taught quantities and numbers in a very abstract manner.

→ This does not help to develop a real concept and understanding.

→ Children will learn things like the multiplication rows only by heart:

- like the lines of a (very boring) poem
- or as a graphical representation of the written sequence of numbers

Instead we have to support children in their intuitive approaches to develop a manifest representation.



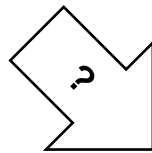
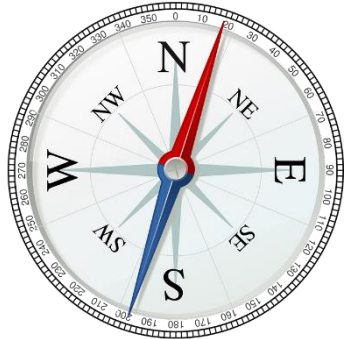
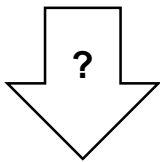
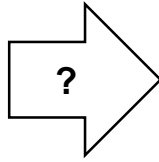
Association of mathematical concepts in games



Association of mathematical concepts in games

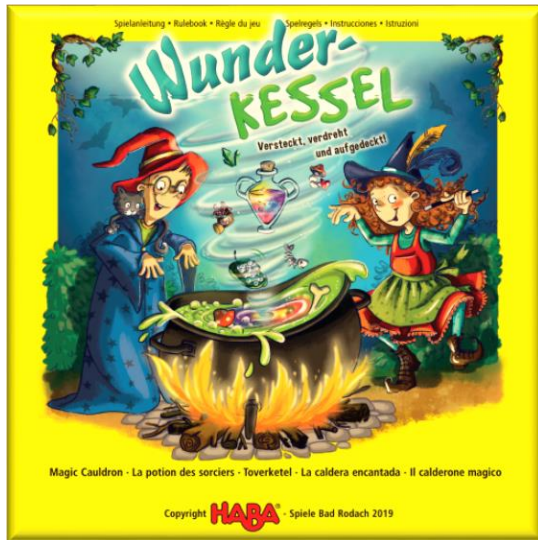


abstract knowledge
+
real manifestations
=
true understanding



+49 999 17190914

Games are also very efficient in training memory!



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An example for learning techniques in games

I took a trip and on this trip I took with me a ...

pair of **flippers**, a **shirt**,
some **ballet shoes**,
a **wool cap**, my **diary**,
a **rubber ball**, ...



An example for learning techniques in games

On the first day I will go to the sea so I will have to bring my **flippers** and to avoid sunburn I will wear my red **shirt**. Far better than wearing **ballet shoes** and a **wool cap**.

In the evening I will write everything into my secret **diary** ...

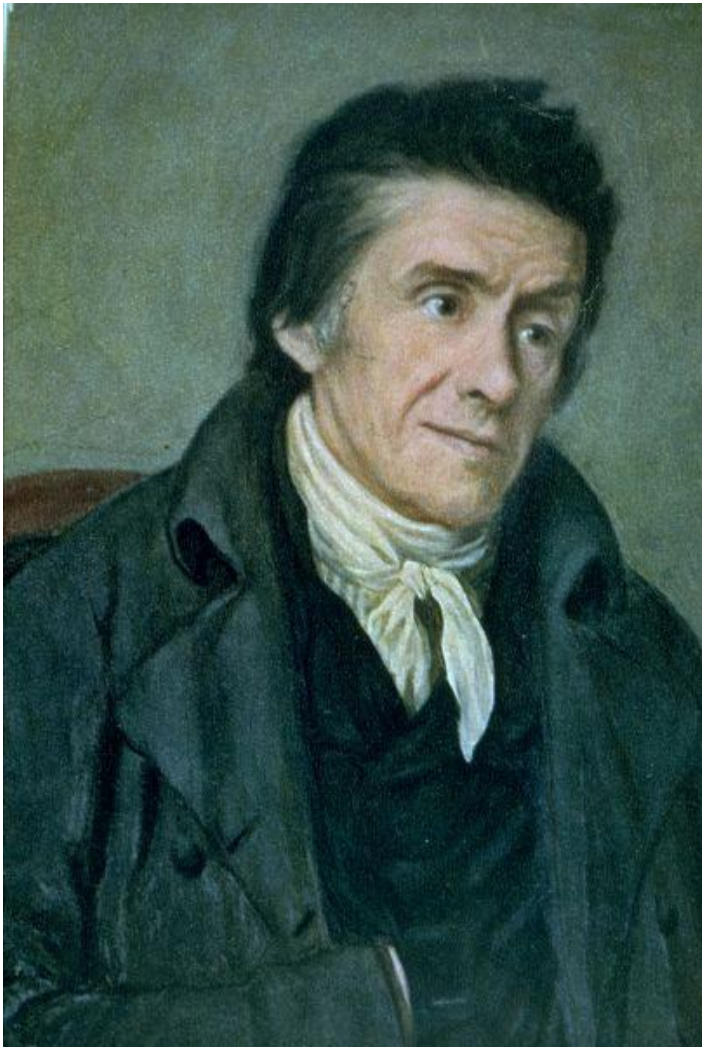


Games create a meaningful context



Games based learning: emotions, manifestations, techniques





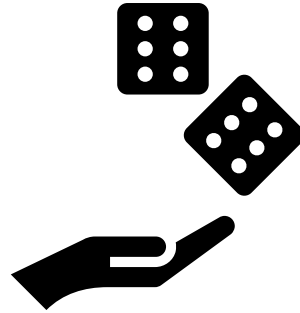
Johann Heinrich Pestalozzi
(1746-1827)



Holistic learning takes...

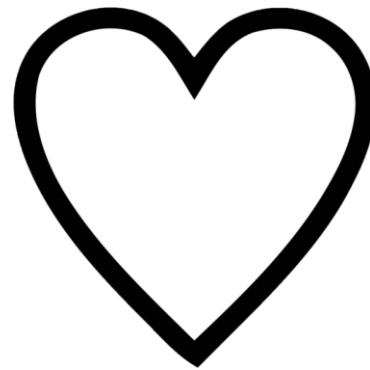
Head:

incorporated learning techniques



Hand:

connection of abstract knowledge
with real life and physical objects



Heart:

(Pestalozzi: morale, discipline, faith)
today: emotional engagement – bingo!

Learning and motivation

Children are naturally curious, right?

You can read a dictionary to them and they will hang on your lips, right?

Perhaps for 1 minute ... or for 5 if you promise them a reward.

Not very persevering!

But what about playing?

Learning by Playing and motivation

Children love to play...

... for hours

... without reward

... even games that look monotonous

... and games that look exhausting

... but they love it anyway.

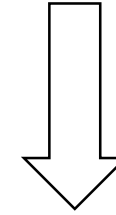


Learning by Playing and motivation

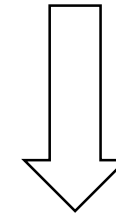


natural transfer of knowledge

parents



playing



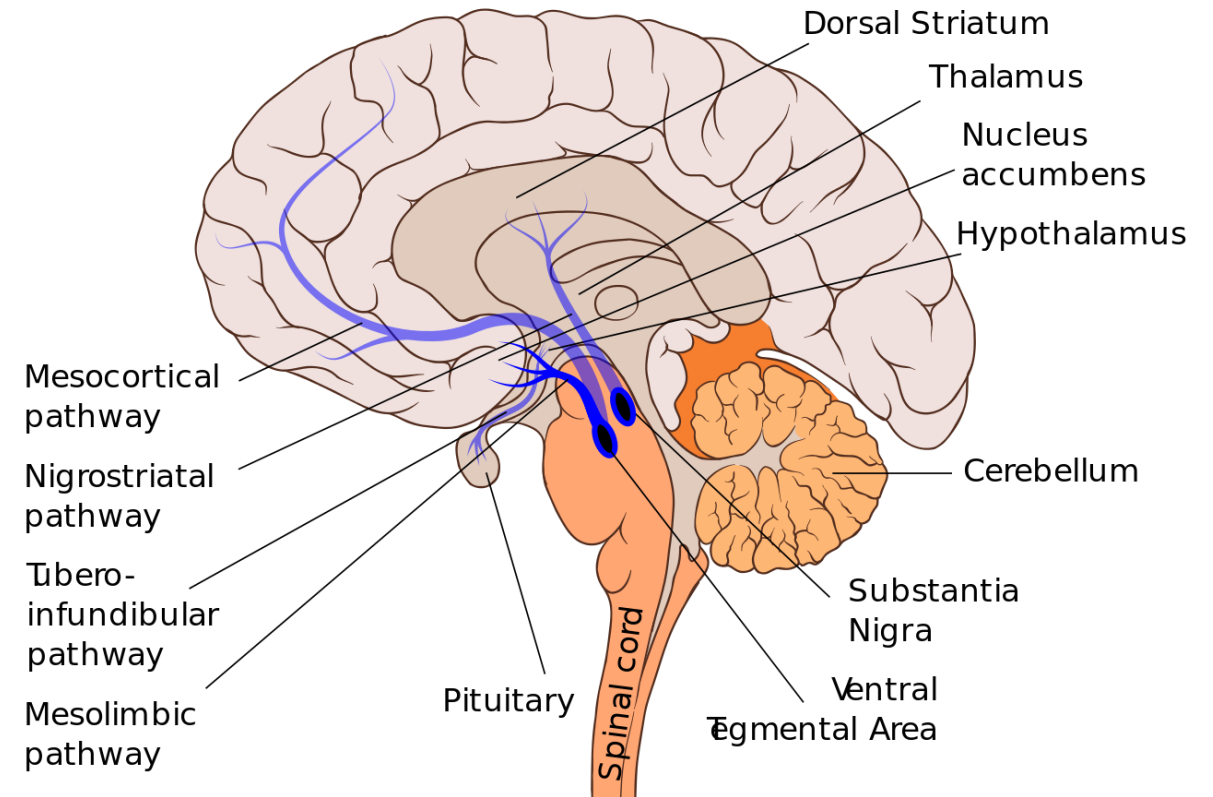
children

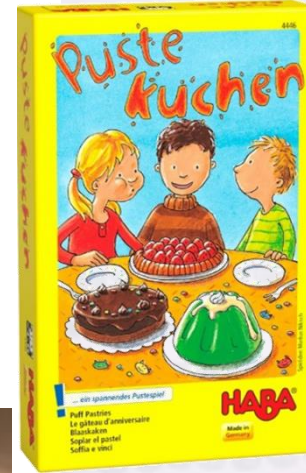
Learning and motivation

Children love to play...

because it is part of our biology.

- They are **intrinsically motivated** to learn by playing.
- = They want to do it again and again without external pushing through reward or penalty.





Learning by Playing ← learn to play

As they play, children train key competences for academic and life success such as...

self-regulation	is trained in games
<i>focus</i>	<i>perceive and react</i>
<i>perseverance</i>	<i>stick to the rules</i>
<i>inhibition</i>	<i>taking turns</i>
<i>cognitive flexibility</i>	<i>adopt to new games/rules</i>
<i>frustration tolerance</i>	<i>cope with losing</i>
<i>...</i>	<i>...</i>

Learning by Playing ← learn to play

As they play, children train key competences for academic and life success such as...

more social- and emotional skills

which are also trained in games

getting along, cooperating, team spirit

coop-games, playing in teams

daring, courage, self-confidence

*taking adaptable risks without
serious consequences*

enduring excitement


games with dexterity / time pressure

empathy, persuasive power

reading others' emotions, bluffing

...

...

A man with a beard and a young girl are sitting on the floor, smiling and playing a game with colorful cardboard blocks. A young boy is sitting next to them, looking intently at the blocks. The blocks are decorated with various cartoon characters and patterns. The man is holding a block high in the air, and the girl is pointing at it. The boy is pointing at the blocks on the floor. The background shows a living room with a sofa and a framed picture of a white dog on the wall.

**Thank you for your
patience, focus,
& endurance!**

**I hope for your
positive emotions,
questions and a good
discussion!**