



# Data, complexity, learning

Games for Health Europe

April 2025

Erge van der Poel

# **Big Dating @ CERN**

Work together

Share data

Common goal



**(BRILLIANTLY)**

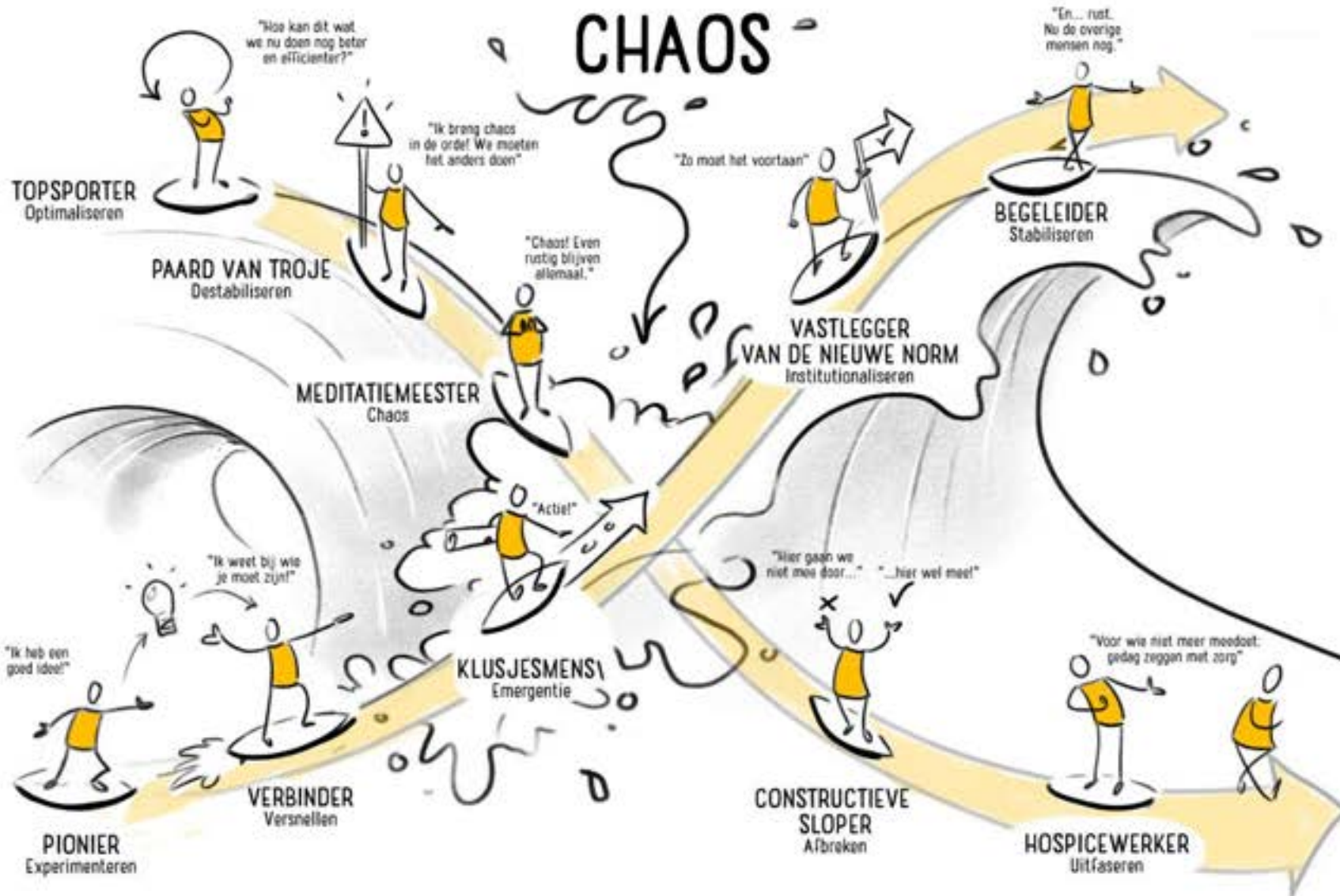
## Persbericht Briljante Mislukkingen Award Zorg 2021

# Corona in Kaart en Huisartsen Eemland winnen de Briljante Mislukkingen Awards Zorg 2021

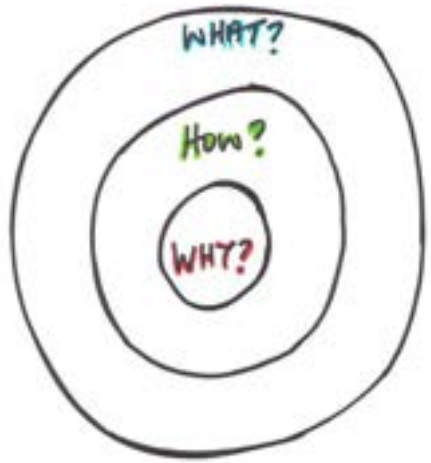
Op 23 maart werden voor de zevende keer de Briljante Mislukkingen Awards Zorg uitgereikt. Een Briljante Mislukking is een goed voorbereide poging om iets te realiseren, die een andere uitkomst heeft dan gepland. Mislukkingen zijn briljant wanneer ervan geleerd wordt en de ervaringen met anderen worden gedeeld. Tijdens de digitale prijsuitreiking deelden de genomineerde zorginnovators hun lessen met het publiek.

# ROLLEN IN TRANSITIES: SURFING THE WAVES OF...

## CHAOS



<https://flatland.agency/blog/rollen-binnen-transities/>



# WHY?

To **learn** from  
every **previous** patient to  
do better for the **next**



**ARTIFICIAL  
INTELLIGENCE**

**TIPPA**



**WE TEND TO OVERESTIMATE THE EFFECT  
OF A TECHNOLOGY IN THE SHORT RUN AND  
UNDERESTIMATE THE EFFECT IN THE LONG  
RUN.**

**- ROY AMARA -**

**STUPID COMPUTERS**

**SMART THINGS**

**SMART PEOPLE**

**STUPID THINGS**



**Oliver Molander** · 2e  
Data & AI Entrepreneur and Investor |...  
7 u · 🌐

+ Volgen

The new CEO, CMO and CTO of USA Inc...

(Dana White is looking at AI memes on LinkedIn and Elon is looking at AI memes on Twitter)

[#elections](#) [#elonmusk](#)

Vertaling weergeven

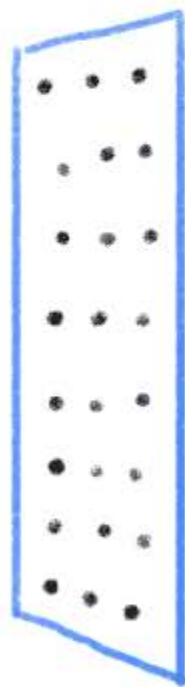
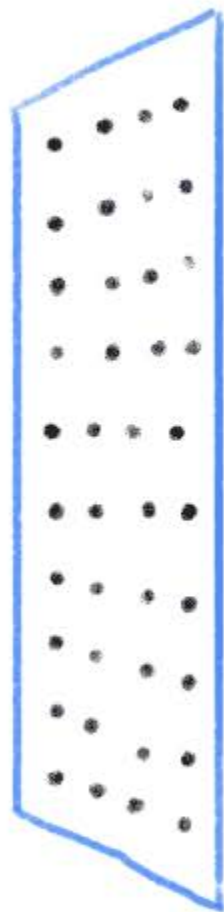
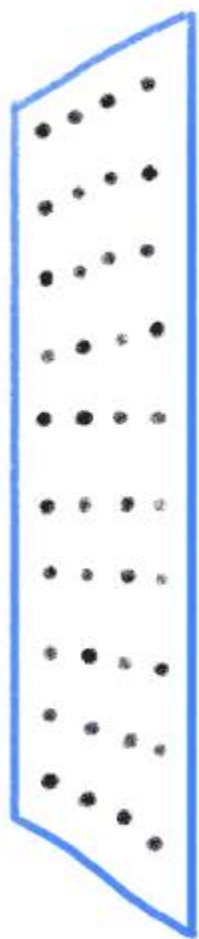


CAT



(LBELED  
PHOTOS)

DOG



OUTPUT

## Cats



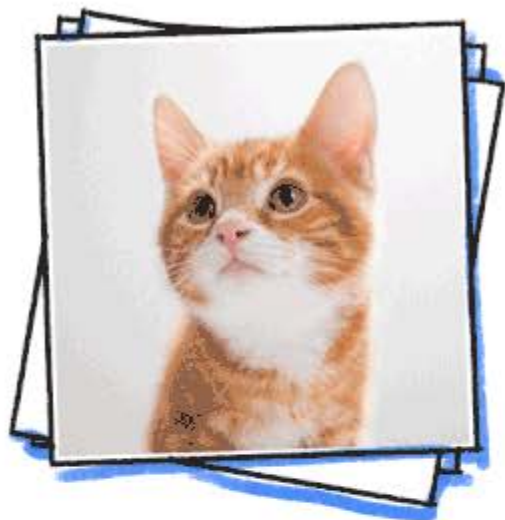
## Dogs



**Sample of cats & dogs images from Kaggle Dataset**

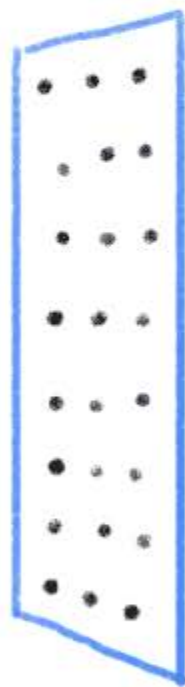
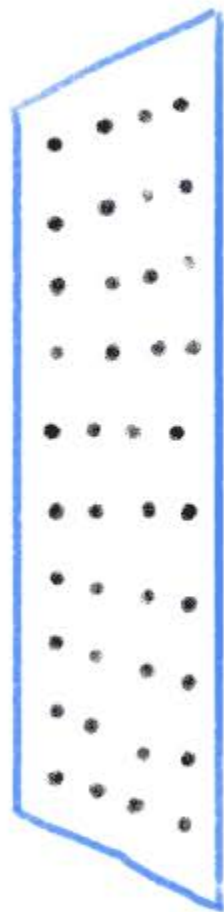
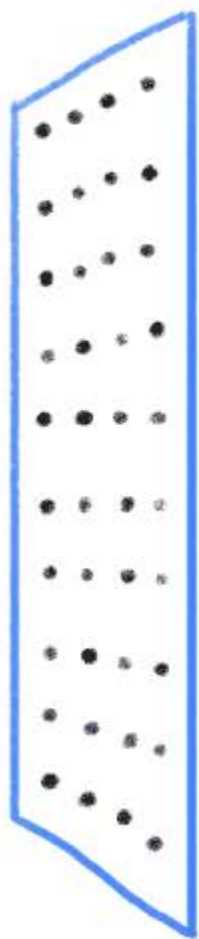


CAT



(Labeled  
PHOTOS)

DOG



OUTPUT

*“People should stop  
training radiologists now.”*

Geoffrey Hinton, 2016



*“People should **change**  
training radiologists now.”*

Egge van der Poel, 2022



# Data-driven working

Human-in-the-loop

# Data-enabled learning

Algorithm-in-the-loop

... commentary in snack-sized mouthfuls



**"I want AI to do my laundry and dishes so that I can do art and writing, not for AI to do my art and writing so that I can do my laundry and dishes."**

Author and videogame enthusiast **Joanna Maciejewska** nails it (although bathroom cleaning goes ahead of laundry and dishes)

"I'm sure I deserve a lot of criticism"

With AI you can do  
things

**faster,  
smarter,  
better.**

How do we learn

**faster,**

**smarter,**

**better?**



“If you work as a radiologist you are like the coyote that is already over the edge of the cliff, but hasn’t yet looked down, so hasn’t realised there is no ground underneath him.

**People should stop training radiologists now.**

It is just completely obvious that **within 5 years deep learning is going to be better than radiologists because it is going to have a lot more experience.**

It might be 10 years, but we’ve got plenty of radiologists already.”



**Professor Geoffrey Hinton FRS**  
Computer Science  
Google & University of Toronto

<http://www.wired.com/2014/01/geoffrey-hinton-deep-learning/>

<https://www.youtube.com/watch?v=2HMpRXstSvQ>

Machine Learning and The Market for Intelligence

27<sup>th</sup> October 2016

@DrAndrewHarper  
#rsmrdh17

**Here To Stay****Computer Won't Replace Good Doctor, MD Says**

Valuable Role Sighted For Machines In Taking Case Histories, Diagnosis

By RAY BRUNER  
State Science Editor

Computers, which today are being used in growing numbers by banks, industries, and other business firms, and by scientists, technologists, engineers, educators, and statisticians, are now casting a shadow over the medical professions. In a few years they are likely to be an important part of medical practice, as aids in diagnosis, treatment, and research, in doctors' offices, clinics, and hospitals.

Concerned about this, with a fear that computers will dehumanize medical care, some worried MDs are asking: "Will the computer replace the doctor?"

Responding to this question, Dr. Warner V. Slack, University of Wisconsin department of medicine, said: "Any doctor who can be replaced by a machine deserves to be replaced by a machine."

Dr. Slack dropped this remark in concluding an illustrated lecture last night at the annual meeting of the Toledo Hospital medical staff. He meant that a doctor who takes advantage of his experience, training, judgment, and intuition in diagnosing and treating his patients need have no fear of being replaced by a computer or some other data processing device. In other words, nothing can take the place of a competent MD.

**New Instrument**

Dr. Slack, who described what he called the laboratory instrument computer (LINC), which has been subjected to extensive trials in medical diagnosis at the University of Wisconsin medical department, said it actually did some things better than many doctors. For one thing, it does not scribble notes that are often unreadable on patients' charts.

first question, he is asked: "Do you have any idea what caused your hives?" If his answer to that question is either "no", "don't know," or "don't understand," he may be asked a number of questions that have to do with the appearance of hives, the frequency of their duration, severity, and related questions. If he answers "yes" with regard to what he thought caused his hives, he is asked more questions about agents that might have caused it, and so on.

**Many questions**

In one sitting in front of the console, the patient may be called upon for similar answers to as many as 350 or more questions pertaining to his medical history.

Answers to questions are stored in the LINC on magnetic tape, and may be retrieved and printed out in detail for the patient's doctor, to help him understand the cause of the patient's complaints.

After the patient records his history on one LINC machine the doctor uses another LINC for recording results of his physical examination of the patient. Occasionally the doctor may neglect to seek answers to all the necessary questions involved in the physical examination. Thereupon, the LINC reminds him of the questions he should ask. The LINC will not

**Assistant Gives Data**

—Blade Photo

COMPUTERS AID, NOT MENACE, PHYSICIANS

Dr. Slack, left, and Dr. David Katchen check picture

**FDA Chief Changes Stand To Back Penalties For LSD**

Bowed To Administration Arguments On Drug-Use Curbs, Congress Unit Told

WASHINGTON (T-P) — Dr. James L. Goddard, commissioner of the Food and Drug Administration, Monday endorsed the Johnson administration's proposal to make possession of the drug LSD illegal.

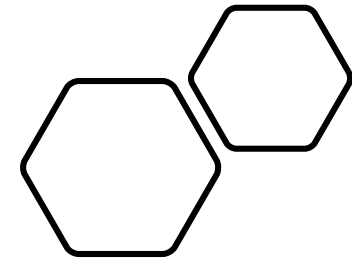
In so doing, he moved away from his position that penalties for possessing LSD would be unnecessary beyond many youths as criminals.

work, and the President supports them in their view. "Their judgment on the need for this provision is one which I respect, and therefore I support the Administration's proposal."

However, Dr. Goddard indicated he is dubious about how much the threat of punishment would assist the use of LSD. He said use of marijuana is

Andrew Elder @AndrewElder - 30 Jun.

1968. Plus ca change...





# Navigating the Jagged Technological Frontier: Field Experimental Evidence of the Effects of AI on Knowledge Worker Productivity and Quality

Harvard Business School Technology & Operations Mgt. Unit Working Paper No. 24-013

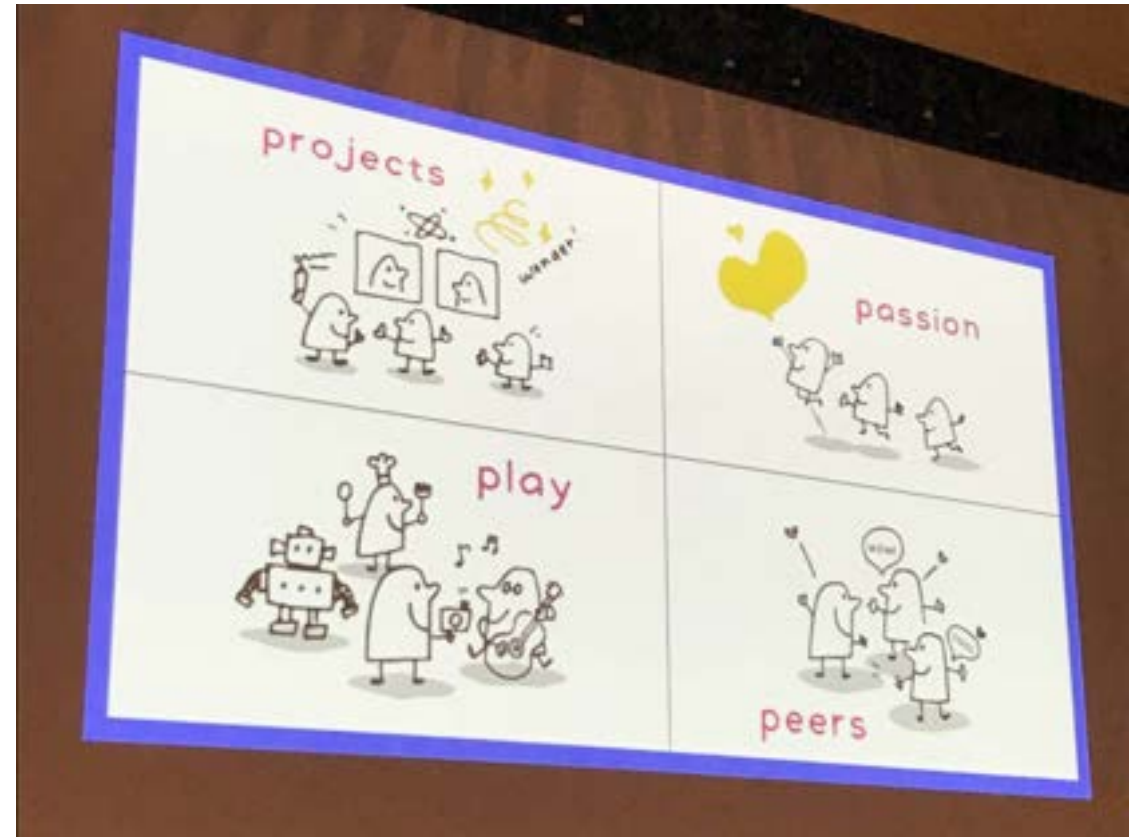
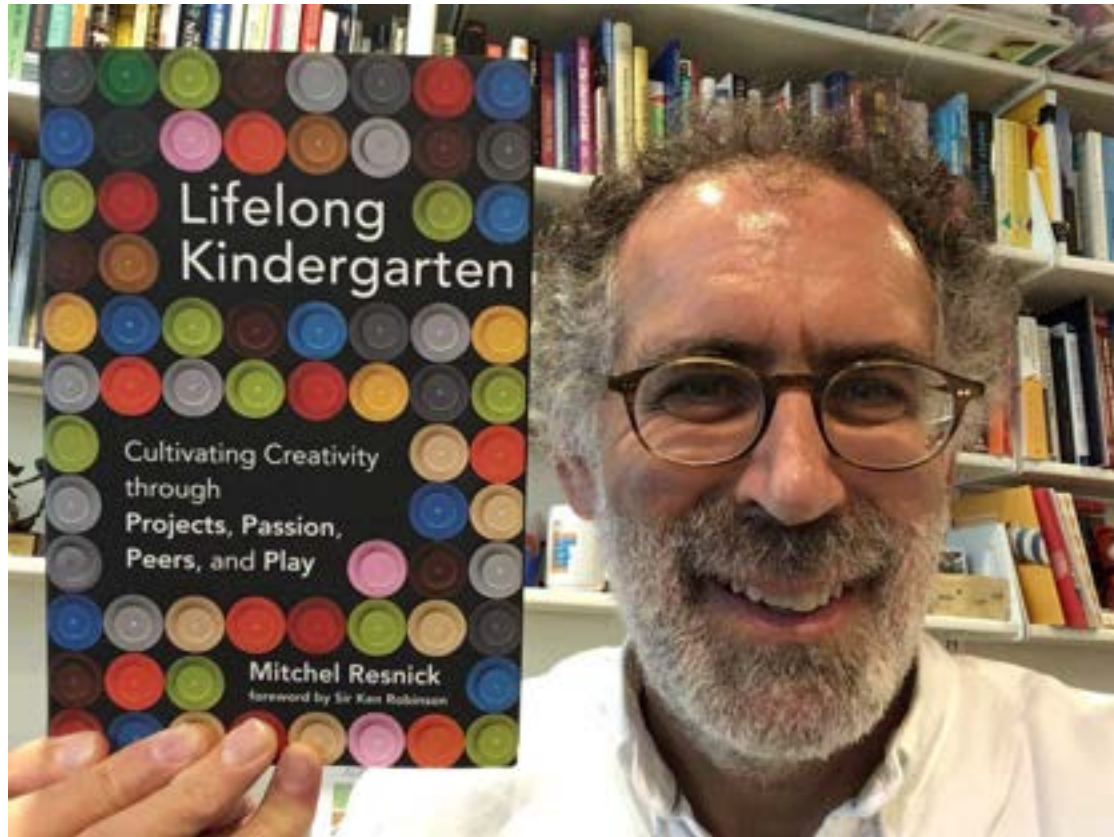
58 Pages • Posted: 18 Sep 2023 • Last revised: 27 Sep 2023

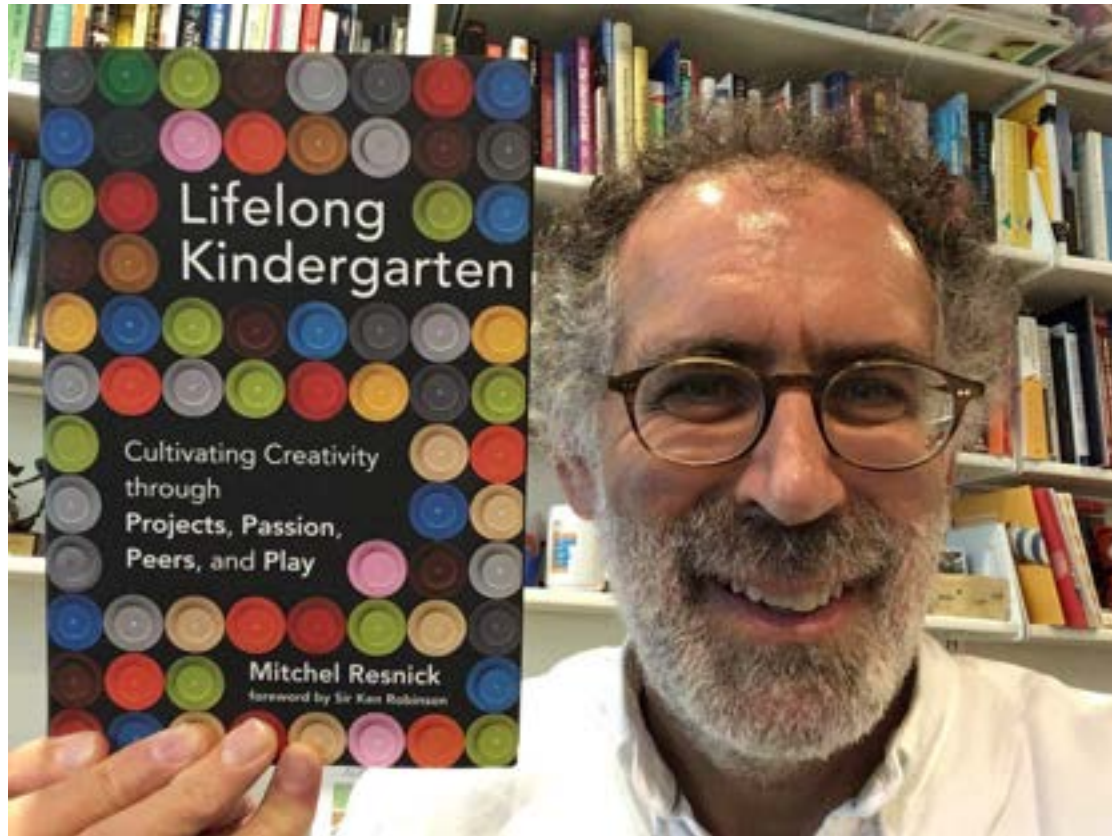


QR full paper



# tasks: + 12.2%  
speed: + 25.1%  
quality: + 40%





I like to think of the creative process in terms of a *Creative Learning Spiral*. As kindergarten children play with blocks, build castles, and tell stories, they engage with all aspects of the creative process:

**Imagine:** In our example, the children start by imagining a fantasy castle—and the family that lives inside.

**Create:** It's not enough to imagine. The children turn their ideas into action, creating a castle, a tower, a story.

**Play:** The children are constantly tinkering and experimenting with their creations, trying to build a taller tower or adding new twists and turns to the story.

**Share:** One group of children collaborates on building the castle, another group collaborates on creating the story, and the two groups share ideas with one another. Each new addition to the castle suggests a new story and vice versa.

**Reflect:** When the tower collapses, the teacher comes over and encourages the children to reflect on why it fell. How could they make a more stable tower? The teacher shows them pictures of skyscrapers, and the children notice that the bottoms of the buildings are wider than the tops. They decide to rebuild their tower with a wider base than before.

**Imagine:** Based on their experiences going through the spiral, the children imagine new ideas and new directions. How about creating a village around the castle? How about creating a puppet show about life in the village?





- 
- Bedankt!
  - Egge van der Poel
  - [info@eggewel.nl](mailto:info@eggewel.nl)
  - +31624817682



John Lennon: “Life is what happens to you while you’re busy making other plans”

Geheelmeesters: “Healthcare is what happens to you while you’re busy making treatment