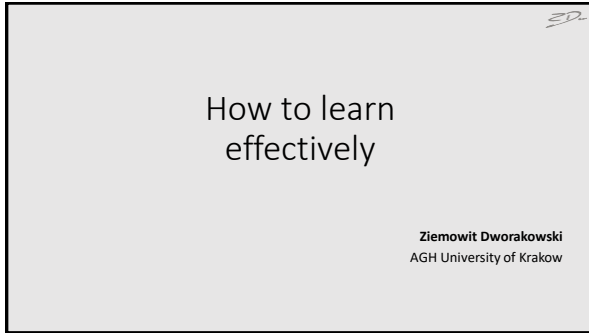
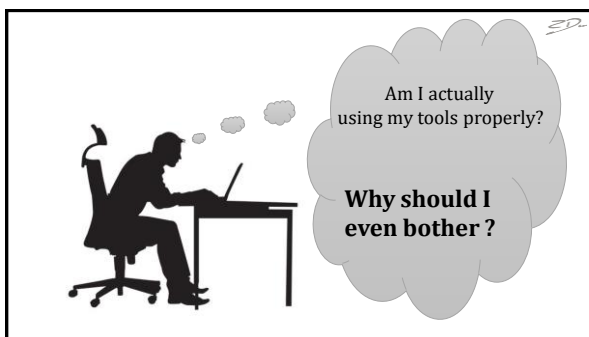




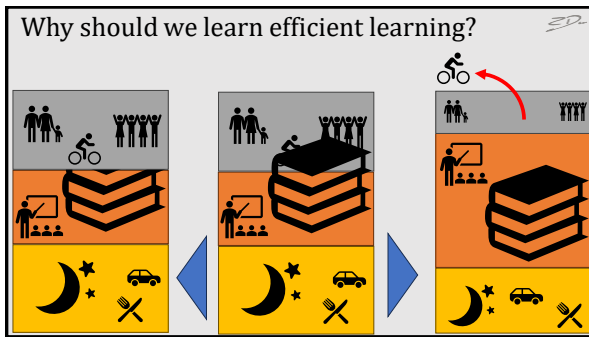
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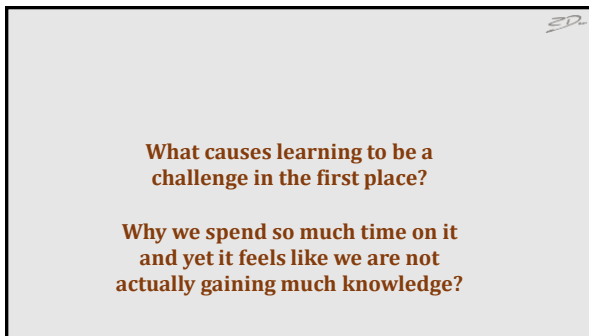
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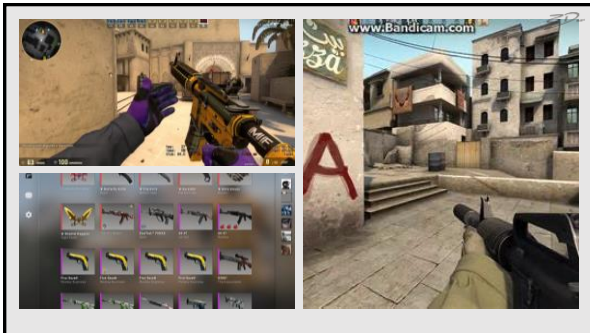
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8

ED

The mountain to climb in some games appears to be just as high.

And yet we climb it and call it „fun“

Why?

And its not actually reserved for games vs school.
Most hobbies have high skill ceiling

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Powerful idea no 1: GAMIFICATION *SD*



Its hard, because

Understanding is difficult

Learning stuff for the sake of learning feels empty

Mostly reading

Boring!

VS



Its fun, because:

Interesting problems

Clearly defined goals / progress tracking

Using (almost) all senses

Emotional investment

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SD



Understanding is difficult

Understanding is a challenge

Learning stuff for the sake of learning feels empty

You need a bit of grind

Mostly reading

You need to diversify

Boring!

Learn how to flow

And also:

- Set your own goals
- Create „builds“
- Track your progress
- Give yourself „achievements“

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SD



Why learning in school/university is „hard“ but learning in games is „fun“?



Evolutionary adaptation:

- We tend to learn easier that which **our brain thinks** increases our chances of survival





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SD

Powerful idea no 2:
MNEMOTECHNICS

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What are we actually memorizing easily?

Where food?
Where lion?
Where home?
Who friend?
How use tool?



Our brain easily memorizes:

- Places
- Images
- People
- Relations and actions
- Stories

Just make use of the mechanisms that
are already in place!

14

610

Number memorization

476 c.e.
- Fall of Roman Empire



0 —

1 

2  S2

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 7

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 9

 9

Pro-tip: Have more than one anchor
for each number

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Word memorization

Nyquist stability criterion

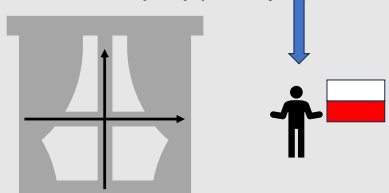


Pro-tip: The more absurd the anchors – the better!

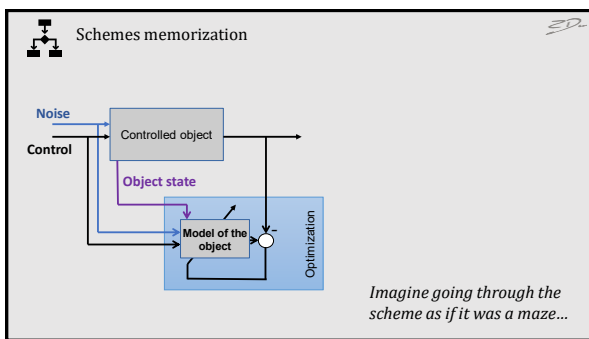
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„Interesting image”

„An automatic continuous-time system is stable if **all the poles** of its transfer function **are located in the left half** of the complex plane”



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Knowledge organization SD

Memory palace



This is an advanced technique, once you get familiar with simple ones – google this one.

Note – memory palace is a perfect tool for long-term memorization. Don't use it for something that you need to memorize briefly and forget at once.

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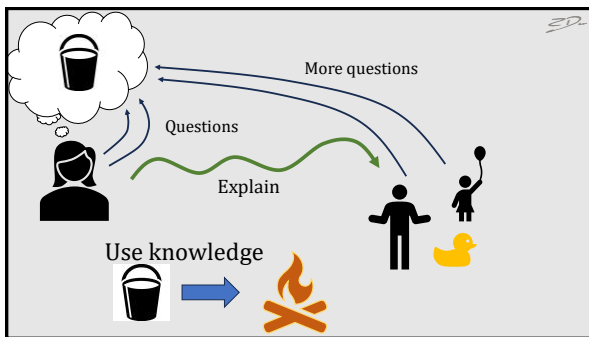
The point is not to learn some „guide to mnemotechnics“ SD

The actual point is to learn how to design your own solutions to memorize stuff

Remember:

Places	Images	People	Relations/Actions	Stories
				

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When to memorize?

 No time

Unnecessary stuff 

 Just need to recall knowledge long-term

„what” question

When to understand?

 We will build on this knowledge

We need to draw conclusions 

 We are learning About relations

„how” question

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Diversify sources of knowledge

1. All the lectures at AGH are free to attend – you can look for other points of view on the same problem
2. There are external sources of brilliant lectures: for instance **MIT Open Course Ware**
3. Tutorials and documentations on the internet can be a very good source as well
4. There are different books on each subject. If one doesn't „feel right” – look for another one!
5. **Ask questions, use office hours, contact colleagues at higher years**
6. Use ChatGPT (**but carefully!**)

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... so what about **ChatGPT** (and other Large Language Models)?

assignments
exams, lectures



report defences,
memorized questions



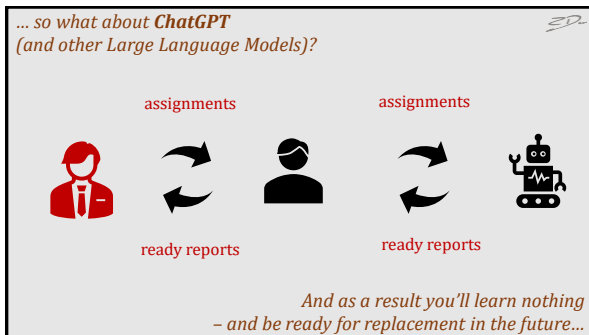
assignments
exam questions,
lecture presentations



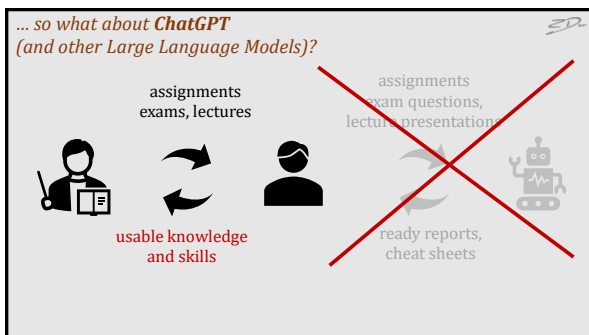
ready reports,
cheat sheets

*And as a result you'll learn nothing
– and be ready for replacement in the future...*

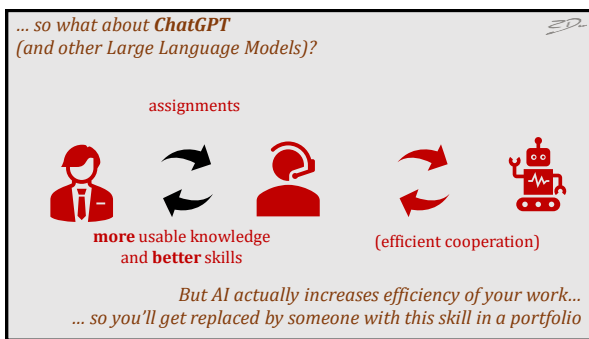
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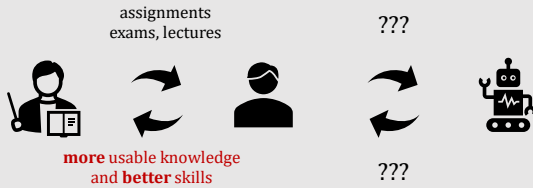
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... so what about *ChatGPT* (and other Large Language Models)?

SD



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My subjective list of general **DOs** and **DON'Ts**

SD

1. Remember that you lose proficiency in tasks that you delegate to AI
– so do it consciously, not habitually.
Delegate mostly stuff that does not develop your skills and knowledge any more
2. Try and test models, check for their capabilities and learn what they can do
in your stead (they will probably get much better in the coming years!)
3. Treat AI as a mirror for **YOUR** ideas and editor of **YOUR** concepts.
Don't delegate creative work and conclusions formulation, actively maintain your
intelligence and problem-solving skills, overreliance on AI will diminish them
4. Treat AI as a younger colleague (employee) who can copy your actions
and learn from you – but check its final work as it may hallucinate, lie and conceal
its incompetence. You're always fully responsible for every piece of the final work!
5. Always acknowledge how you use AI (and be prepared to observe particular rules)

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How AI can help in your work (in particular)?

SD

1. It can search the internet for you and point you out to sources
check them though as they can be hallucinated (invented by AI)
2. It can help you find mistakes in your work (e.g. bugs in code)
3. It can serve as a tutor for concept understanding:
„I think ... am I getting this right?“
„Can you show me any practical examples of this concept?“
4. It can serve as a reviewer:
„I think A, B and C are possible solutions here. Am I forgetting about anything?“
5. It can serve as an editor:
„check this text and point out (or correct) language mistakes“

But in all cases – you should be the one with HIGHER critical thinking skills

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And to conclude on a more general note...

SD

Work regularly

(pending assignments tend to cumulate in a bad way)

But also...

**Staying healthy, rested and generally satisfied usually
vastly increases your learning potential as well...**

*So set reasonable goals, Exercise and rest regularly,
maintain relations with people that are important for you...*

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**Good luck
and thank you**

SD

Slides:

<https://home.agh.edu.pl/~zdw/students.html>

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D3, 4.17

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