



Educating for Uncertainty: The Alignment Problem

Zentrum für
Angewandte Informatik und
Data Science

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HUMAN AGENCY

Human Agency is the ability to recognize, reflect, and **actively shape** individual **spheres of action** based on one's own experiences and perspectives.

Thus, to **interact** with the **structural conditions** of the social and technical environment.



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AUTONOMY

“We feel free when we make decisions that meet our needs.”

Do we really know our needs?

Where do they come from and how were they shaped?



LEARNING

Learning can occur both **consciously** and **unconsciously** and encompasses various forms and methods.

Everything we perceive and experience shapes our thinking.



WHY DO WE LEARN?

We learn now for the world of tomorrow!

Our brain predicts the future to guide us through life.

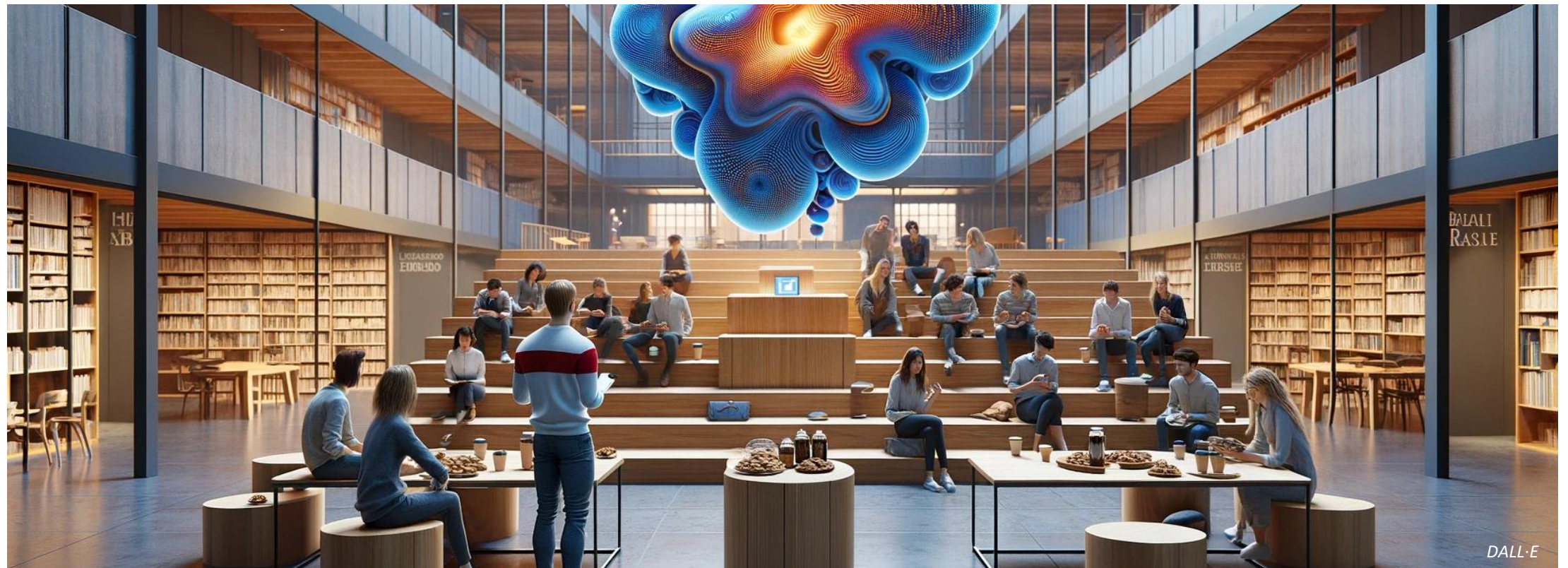
Which skills will be needed in the future and for what purpose?

If we cannot answer this, we may go for the abilities of humans to adapt to the future.

What might these be?



HOW DO I WORK WITH AI?



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DISTRIBUTED COGNITION

Cognition isn't happening exclusively in an individual's mind, it is extended through **interactions** with the environment, other **people** and **tools/agents**.





DISTRIBUTED COGNITION

Work in the brain is **resistance**.

With **AI support**, we can **overcome resistance** more easily.
We can use this positively!

But if I **outsource** processes **without reflection**,
I can lose control over them...

What is **cognitive debt**?

What tool do I need for
Which step and
Why?



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THE ALIGNMENT PROBLEM(S)

Does the goal of AI align with our goals?

Does education align with future challenges?

How can we shape transformation for an uncertain future?

What are the variables driving transformation at the basis?

If **uncertainty** regarding the future is so high that we cannot anticipate what skills will be valuable, the consequence could be that we need to put the **human at the center** of transformation.



PREREQUISITES FOR SOUND JUDGMENT

Discipline specific judgment

Acquiring subject-specific knowledge is crucial for assessing information and processes.

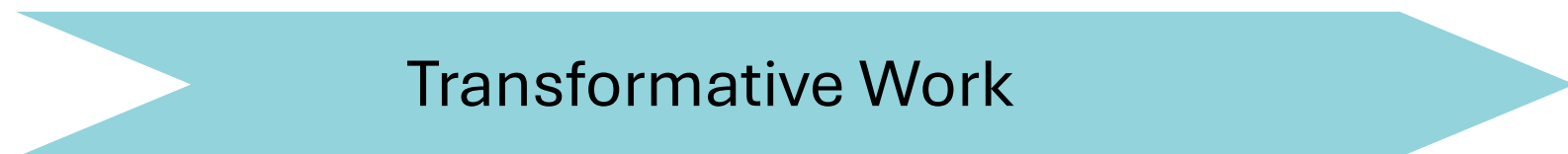
Transversal academic literacies

Critical thinking, academic research competencies, digital literacy, and AI literacy skills must be acquired to handle AI output appropriately.



HOW DO WE NAVIGATE THIS CHANGE?

As automation increases, we need to redefine our role as researchers and teachers!



CONTACT



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THE ALIGNMENT PROBLEM(S)

The **skills** we need to **maintain** through the age of AI will differ between faculties, but we need a framework in teaching and science that enables a future where human agency could be key.

This implies that we need **resilient**, **adaptable**, and **critically thinking** individuals who can act autonomously and engage with the future.