

# Empowered by AI

## Sustainable Business & Digital Innovation

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# Quick introduction



Lizzy Bleumers

Thomas More Research  
Sustainable Business & Digital Innovation

I have been using participatory design and user research to inform the development and implementation of new technology applications in media, entertainment and education since 2008.

Innovation starts with the user!

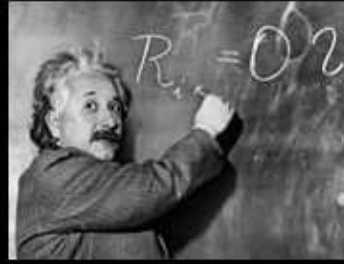


The core of teaching

# TEACHER



**What my friends think I do**



**What my Mom thinks I do**



**What society thinks I do**



**What kids think I do**



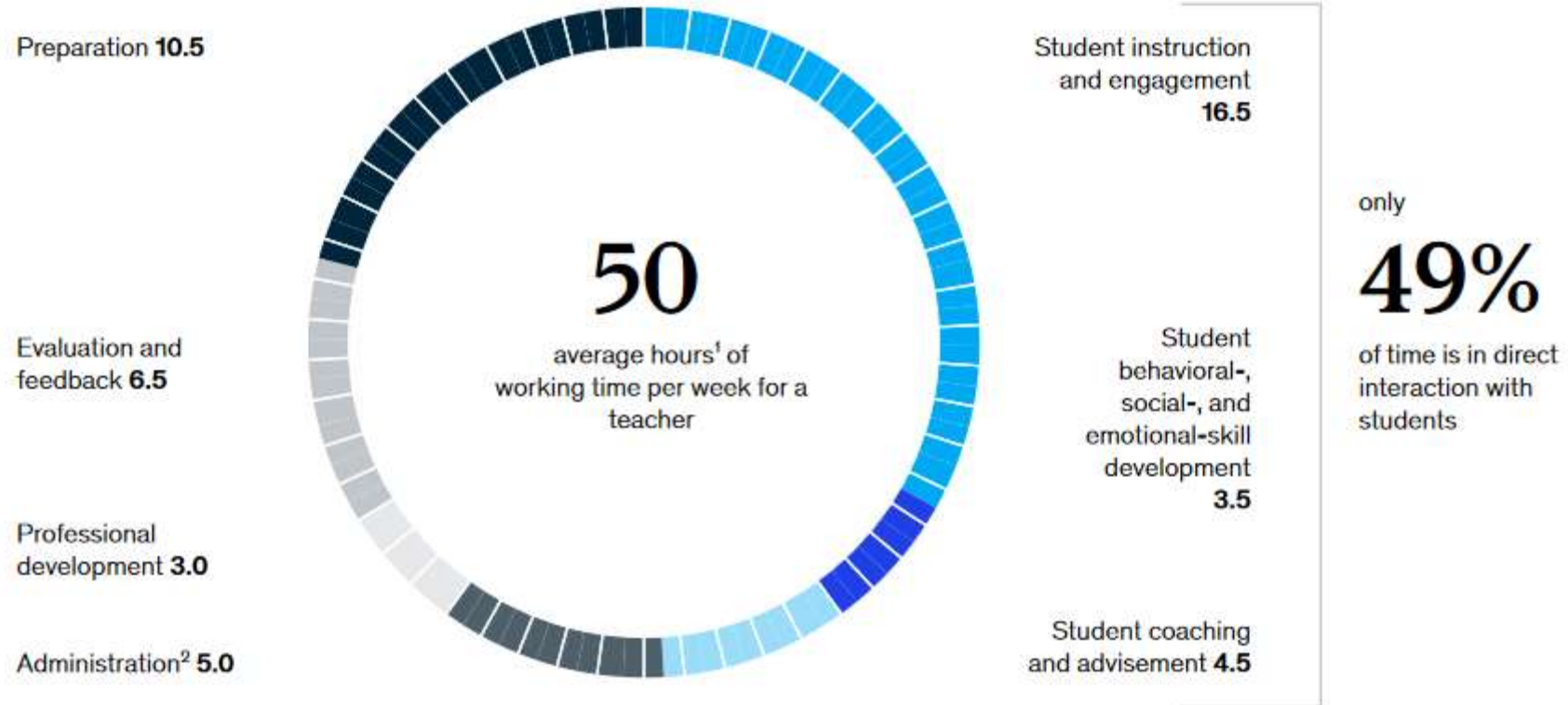
**What I think I do**



**What I really do**

## Teachers work about 50 hours a week, spending less than half of the time in direct interaction with students.

Activity composition of teacher working hours, number of hours



<sup>1</sup> Average for respondents in Canada, Singapore, United Kingdom, and United States.

<sup>2</sup> Includes a small "other" category.

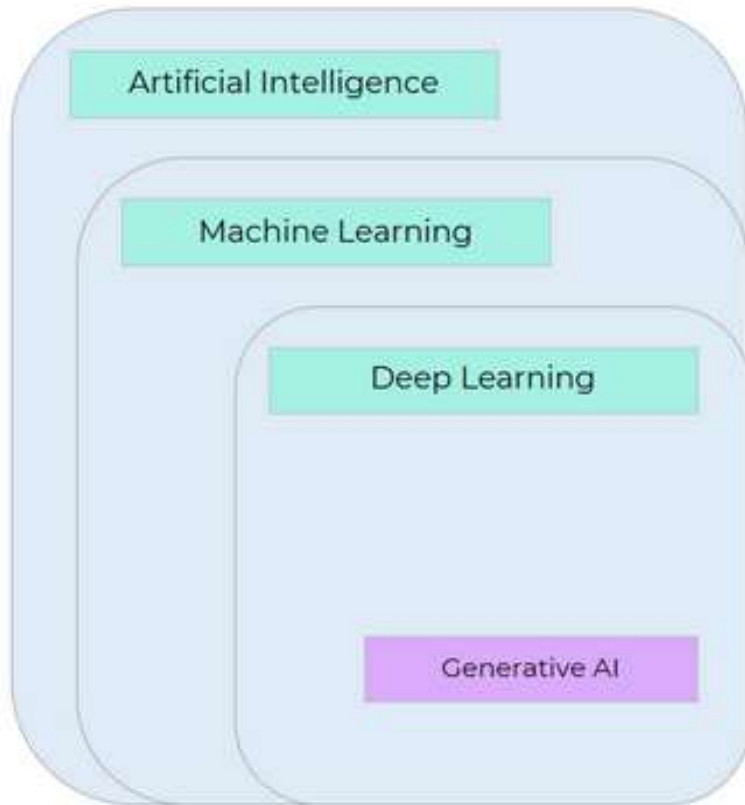
Source: McKinsey Global Teacher and Student Survey

# Enter generative AI...



*Generative AI refers to*

**AI models and tools that  
can (enable us to) create  
various content types**



1950's

### Artificial Intelligence

In 1956, the Dartmouth Summer Research Project on Artificial Intelligence (DSRPAI) Conference marked the birth of the field of AI (New Hampshire).



1990's

### Machine Learning

A subset of AI that enables machines to learn from data using statistical models and artificial neural networks to make decisions. Deep Blue (1997)



2010's

### Deep Learning

An ML technique that uses deep neural networks (multiple neuron layers) to learn more complex patterns from data. Transformers (2017), GPT (2018)



2020's

### Foundation Models (General Purpose)

Models pre-trained on large amounts of data that can be adapted for specific tasks, including generating written, visual, and auditory content. GPT-3 (2020)

[Demystifying Generative AI](#)

# Enter generative AI... And it may have you excited

The CoolCatTeacher

LATEST IN ARTIFICIAL INTELLIGENCE (AI)

### 4 INGREDIENTS TO ENGAGE STUDENTS IN AN AI AGE

by Vicki Davis | April 3, 2024 | 33 minutes read

The four aspects of engaging students in the AI age.

### AI Webinar: Artificial Intelligence in the Educational and the Learning Landscape

by Vicki Davis | March 21, 2024 | 4 minutes read

A 2 CEU Webinar. Join me as I present a webinar on April 18th from 5:30 - ...

Barend Last  
Thijmen Sprakel

2<sup>e</sup> herziene editie

Boom

## CHATTEN MET NAPOLEON

Werken met generatieve AI in het onderwijs

<https://www.barendlast.com/edu-ai>

KlasCement

Home Leermiddelen Network Doeltes

Meld aan Registreren

AI Zoek

### Leermiddelen (271)

Weergave: | Sorteer: Gepersonaliseerd

#### Claude: AI-chatbot

Claude is getraind in het voeren van natuurlijke, op tekst gebaseerde gesprekken en blinkt uit in taken als samenvatten, redigeren, vragen en antwoorden, besluitvorming, codeschrijven en meer.

App of software | 17-05-2024 | Nieuw

Leerkracht, ICT-coördinator

facebook

## AI FOR TEACHERS

AI FOR TEACHERS

### AI for Teachers

Public group · 18.1K members

Join group



# Enter generative AI... And it may have you worried

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## Universities ready to take up generative artificial intelligence, but say guidelines are needed

24 Oct 2023 | News

Universities | R&D Policy | AI | Digital

As AI becomes a daily helper for research managers, institutions are drafting EU guidelines and learning from one another.

By Greta Hargrave

Universities are slowly adopting generative AI in their work, but in-depth guidance is still missing for many institutions, with some waiting for the European Commission to set EU guidelines for safe use.

Find out more about the Science | Business Network

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### UNITED KINGDOM

## Most students use AI for studies, digital divide emerges – Survey

Karen MacGregor | 02 February 2024

In News | Post | News, UK

Usage: (click photo)

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Related Links

**GLOBAL**  
Students are embracing AI but want training – Global Survey

**GLOBAL**  
Generative AI action hints at core future roles in universities

**GLOBAL**  
UK, Australia, Canada: Student satisfaction below average

Featured Employers

Generative AI has become normalised in British universities, with most students using an AI tool to support studying and only 5% likely using AI to cheat, a first national survey of students and AI users the advent of ChatGPT has revealed. But urgent action is needed to stop a new digital divide emerging, and students want clear AI policies and support.

Among students surveyed, 53% have used generative AI to help with their studies. The most common use is as an ‘AI private tutor’, with 36% using AI to help explain concepts.

“For every student who uses generative AI every day, there is another who has never opened ChatGPT or Google Bard, which gives some students a huge advantage,” said expert author Josh Freeman, policy manager at the Higher Education Policy Institute (HEPI), in a release. Male and Asian students are more likely to have used AI than others.

“The divide will only grow larger as generative AI tools become more powerful. Rather than merely adopting a positive approach, institutions should educate students in the effective use of generative AI – and be prepared to provide AI tools where they can aid learning,” the report stated. There is also a digital divide between institutions, with some embracing and others sidelining AI.

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TAMPA, FL • APRIL 6-8

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VIEW SCHEDULE & REGISTER

**PennGSE**  
Global Higher Education Management, M.S.Ed.

## Students Outrunning Faculty in AI Use

A new study finds over half of students use generative AI, while more than 75 percent of faculty members do not regularly use the technology.

## Universities Rethink Using AI Writing Detectors to Vet Students' Work

Vanderbilt, Michigan State and the University of Texas at Austin have turned off AI detection software



Several major universities have turned off AI detection software citing concerns over accuracy and a fear of falsely accusing students of using AI to cheat. Photographer: Christian Petersen/Getty Images

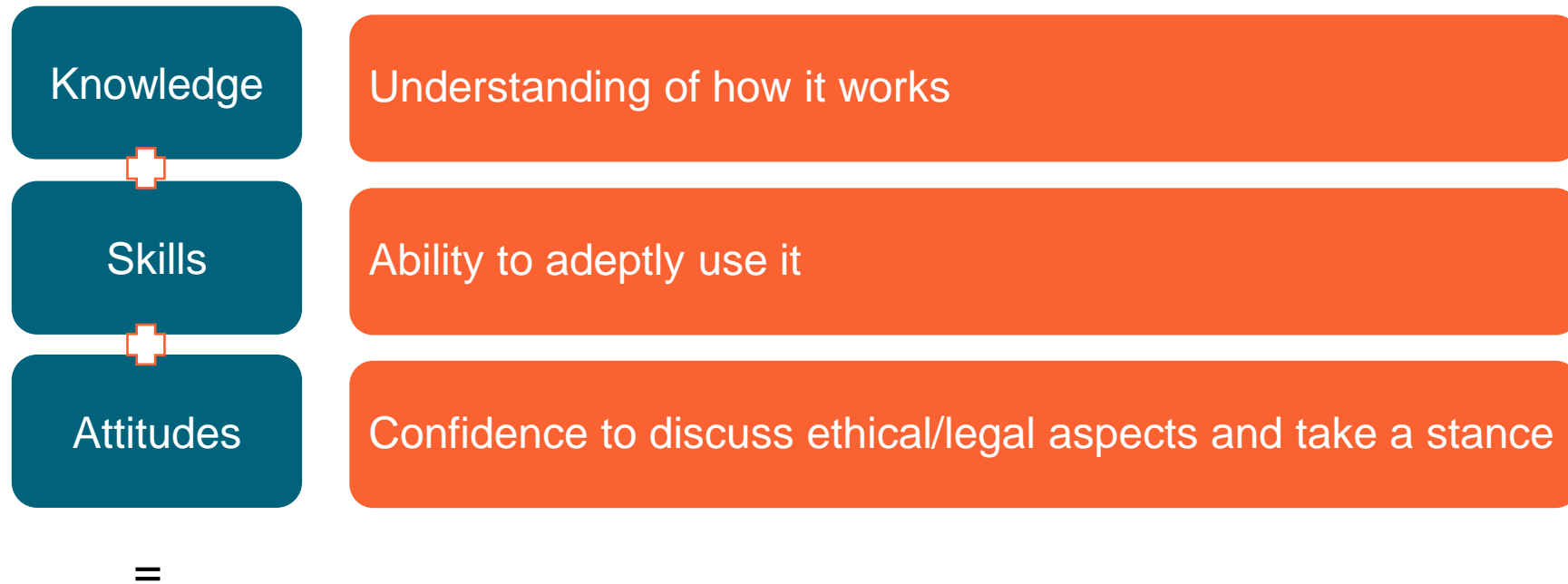
No matter how we look at it

We simply cannot ignore it



# AI literacy is key

## Supporting...

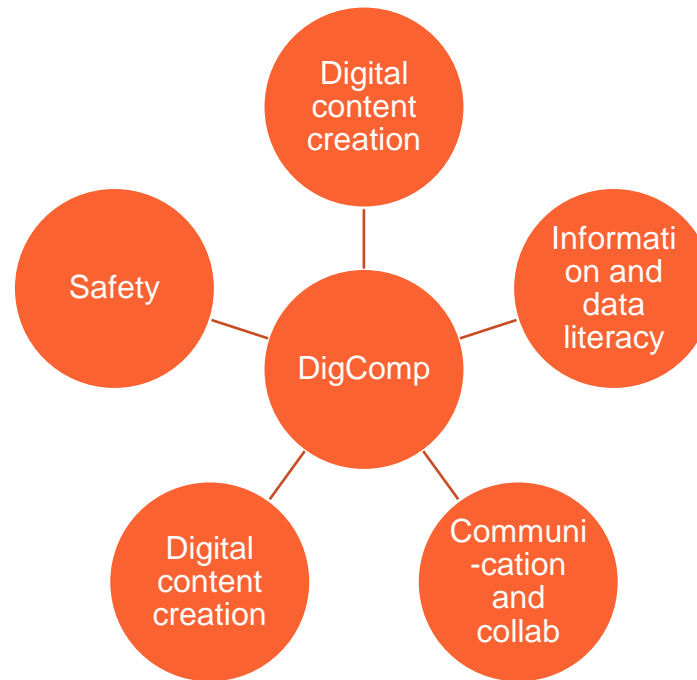


**Empowering teachers and students to wield the potential responsibly and critically**

See <https://www.edweek.org/technology/ai-literacy-explained/2023/05>

# Promoting competence

“In DigComp, digital competence involves the “confident, critical and responsible use of, and engagement with, digital technologies for learning, at work, and for participation in society. It is defined as a combination of knowledge, skills and attitudes.” ([Council Recommendation on Key Competences for Life-long Learning, 2018](#)).”



[DigComp framework](#)



# Empowered by AI

## Goal

Identifying chances and challenges for applying **generative AI** for...

- Education
  - Tourism
  - Design
  - Wellbeing
- + promoting competent use

## Key results

- Inventory of use cases
- Validated use case + lessons learned

# Teacher

- Defining lesson plans
- Translating learning goals
- Brainstorming
- Researching & preparing classes
- Designing working methods
- Generating exercises
- Coaching and evaluation
- Communication
- ...

# Student

- Online research
- Processing learning materials
- Self evaluation
- Reading and writing aid
- Practicing
- Inquiry-based learning
- Concept explanation
- ...

# General purpose AI for education

Many public resources offered by universities (of applied science):

<https://libguides.lib.siu.edu/ai-for-teachers>

<https://www.kuleuven.be/english/education/leuvenlearninglab/support/highlighted/generative-artificial-intelligence>

<https://mitsloanedtech.mit.edu/ai/teach/>

<https://www.bu.edu/ctl/resources/teaching-and-learning-in-an-ai-world/>

<https://www.ai4t.eu/resources/>

...

# MagicSlide

## Repurposing existing materials

- YouTube video
- PDF or doc
- Text or topic

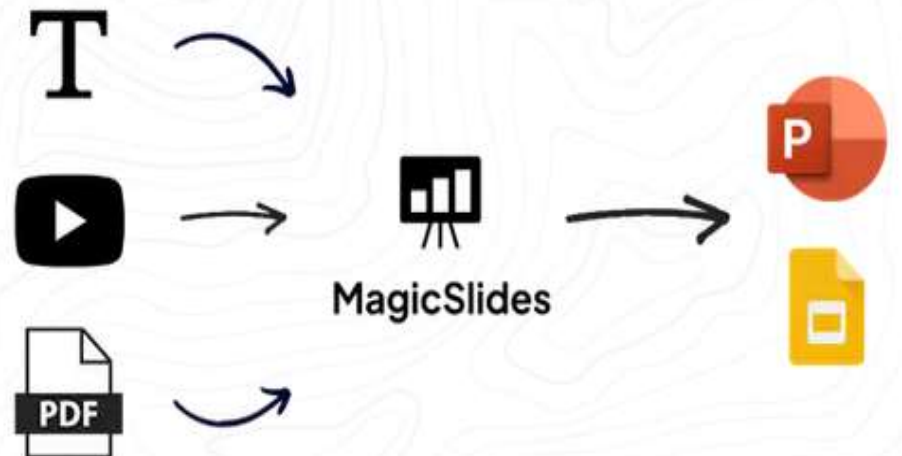
# Professional Presentations in Seconds with AI

Just Enter Topic, Youtube URL, PDF, or Text to get a beautiful PPT in seconds. use the **bulb** for AI suggestions.

 Upload file

 <https://youtu.be/...>

Create PPT with AI





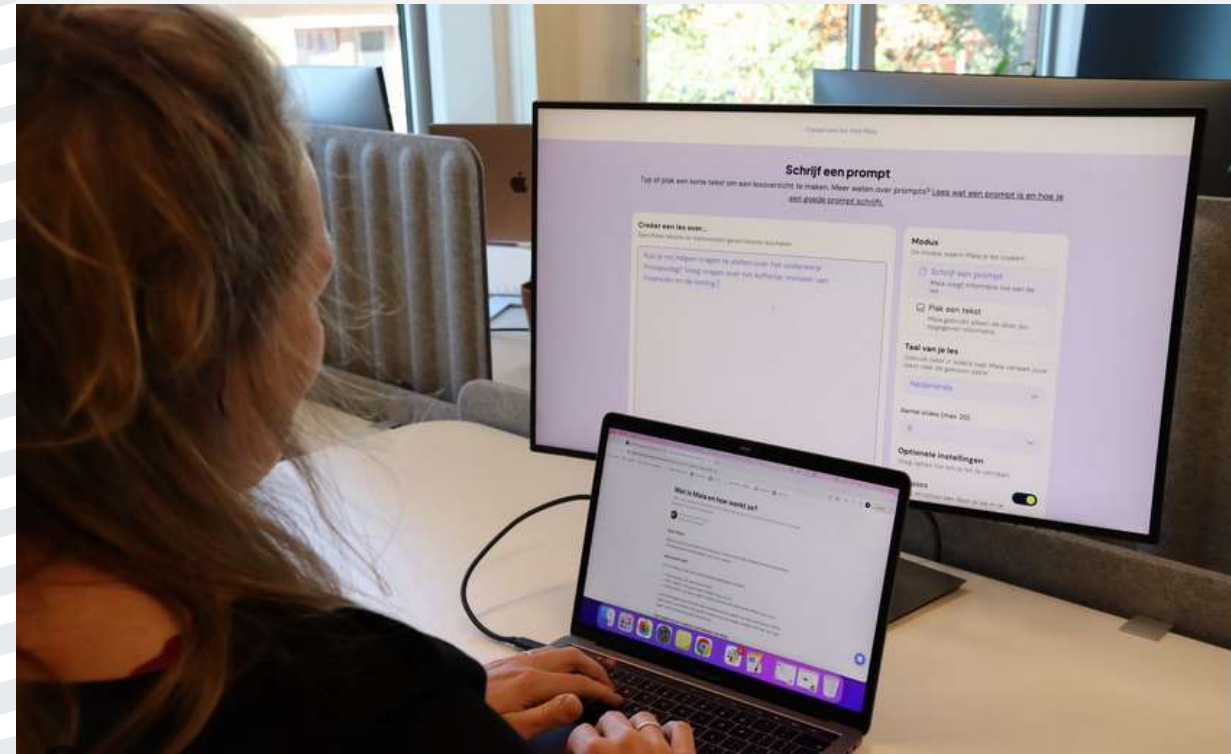
# AI-tools for content production



# Maia

Helps prepare and structure lessons:

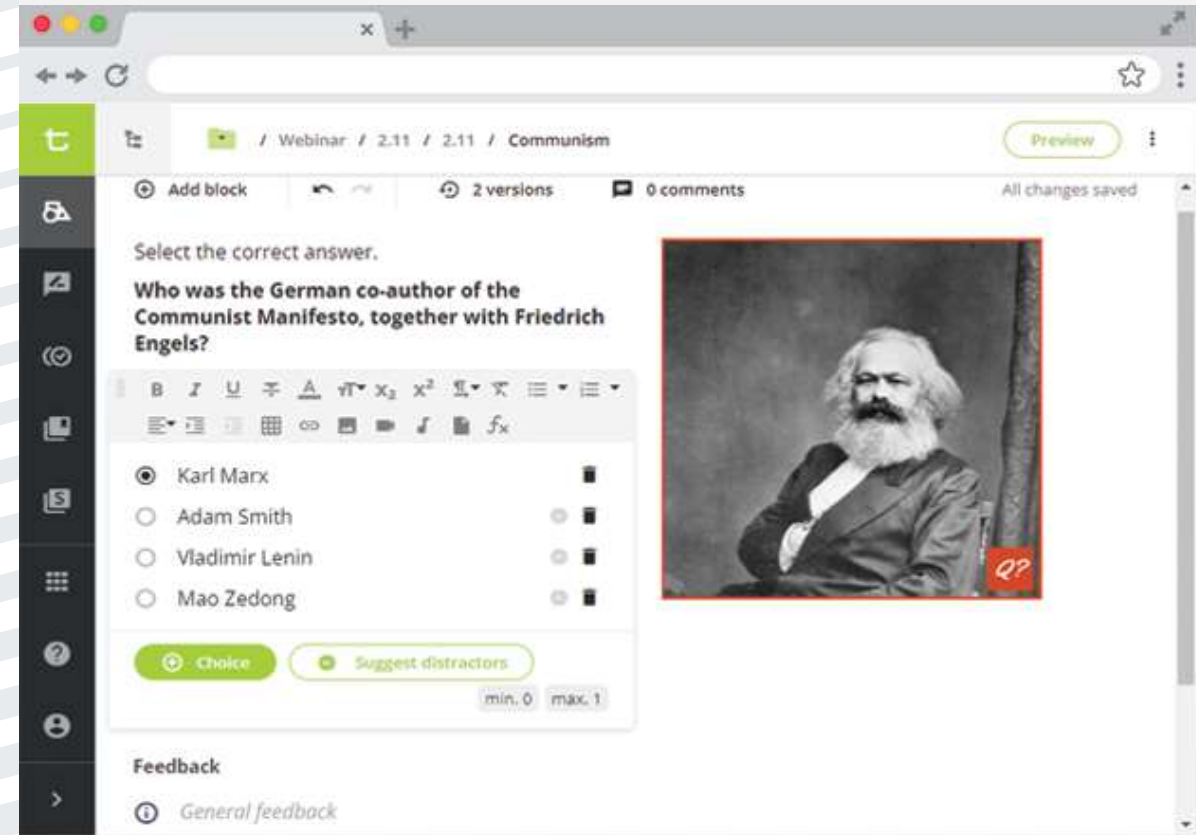
- Activating foreknowledge
- Delivering information
- Concluding with open questions



# AssessmentQ

Supports the creation of exercises:

- Automatic distractor generation for multiple choice questions
- Detects inflections of verbs and replaces them with fill-in fields



The screenshot displays the AssessmentQ web interface. The browser address bar shows the URL: `Webinar / 2.11 / 2.11 / Communism`. The page title is "Communism". The interface includes a "Preview" button in the top right corner. The main content area displays a question: "Select the correct answer. Who was the German co-author of the Communist Manifesto, together with Friedrich Engels?". To the right of the question is a portrait of Karl Marx. Below the question is a rich text editor with a toolbar. The answer options are:  Karl Marx,  Adam Smith,  Vladimir Lenin, and  Mao Zedong. Below the options are two buttons: "Choice" and "Suggest distractors". The "Suggest distractors" button has a "min. 0" and "max. 1" label. At the bottom of the page, there is a "Feedback" section with a "General feedback" link.

# EnlightenAI

Facilitates grading:

- Creating rubrics
- Trained AI grader
- Scores/feedback modeled after your own

The screenshot displays the EnlightenAI interface for grading a research paper. The title is "Honors English, Section 1, Final Research Paper". At the top right, there are buttons for "Start Over", "Save and Exit", and "Save and Continue".

The main content area shows a research paper excerpt with the following text:

Effective feedback in education is a cornerstone for student learning and achievement. Hattie and Timperley (2007) highlight its pivotal role, demonstrating that proper feedback can significantly impact student performance, particularly when it is timely, specific, and actionable.

Feedback is one of the most powerful influences on learning and achievement. Research by Hattie and Timperley (2007) shows that feedback, particularly in written form, has a significant effect size on student performance. This is especially true when feedback is timely and specific, allowing students to understand their strengths and areas for improvement clearly.

Despite its importance, providing effective feedback is challenging for educators. A survey by EdWeek (2022) revealed that the median teacher spends about 5 hours per week on grading, marking it as one of the most time-consuming non-instructional tasks. For subjects like humanities, where complex student writings are assessed, this can escalate, leading to hurried evaluations and compromised feedback quality.

Timeliness in feedback is crucial for its effectiveness. Nicol and Macfarlane-Dick (2006) emphasize that prompt feedback enables students to self-correct and internalize learning more effectively. However, the demanding workload on teachers often leads to delays in feedback provision, impacting its efficacy.

In conclusion, the need for effective feedback in education is undeniable. It is a critical element that influences student learning outcomes, engagement, and motivation. To maximize its benefits, educational systems and tools must be designed to support educators in providing timely, specific, and actionable feedback, ensuring that every student benefits from the transformative power of educational feedback.

On the right side, the "Rubric Scores" section shows three criteria with sliders:

- Organization & Purpose: Score 5
- Evidence & Elaboration: Score 5
- Conventions: Score 2

Below the rubric is the "Feedback" section, which contains the following text:

This essay presents a compelling case that feedback in education is indeed a superpower hiding in plain sight. Its thorough examination of the research by Hattie and Timperley, along with the insights from the EdWeek survey, convincingly demonstrates the profound impact that effective feedback can have on student learning and achievement.

At the bottom right, a notification states: "AI is currently 80% trained! Once it reaches 100%, it will provide best scoring and feedback recommendations to you." Below this is a button that says "AI Generate Scores & Feedback".

At the bottom left, there are navigation buttons: "Previous", "Bruce Wayne", and "Next".

AI as a time-saver?



# Yes, under the right circumstances



AI as a time-saver?

Yes, but maybe it can be more?



# (Em)powered by AI: SAMR as a lens

Leveraging the capabilities of generative AI in educational media production

How might it **unburden** us by taking over certain tasks?

How might it **help** us while we engage in certain tasks?

How might we **address** a task differently with AI by our side?

How might we **reconsider** the way we teach and learn?



Substitution



Augmentation



Modification



Redefinition

OPTIMISE

TRANSFORM

EXPAND

Quick wins

Grand prix





Flags

Check a11y



Khanmigo beta

AI power



This conversation is recorded and viewable by your teacher.

The question asks which change in the United States during the late nineteenth-century most directly contributed to the development depicted in the image. The image shows Uncle Sam teaching a class of students, representing newly annexed territories, about civilization.

Now, let's analyze each option:

- 1. The United States started annexing overseas territories to increase trade with East Asia and Latin America.
- 2. The United States intervened in countries who had communist governments

Type message (do NOT share any personal data)



Clear chat



Khanmigo makes mistakes sometimes. [Here's why.](#)

Which of the following nineteenth-century changes depicted in the image...

Choose 1 answer:

- (A) The United States started exchanging for...
- (B) The United States started trade with East...
- (C) The United States started its own intere...
- (D) The United States intervened in countries who had communist governments.



Start over

Do 4 problems



Check

# Olex.AI

## Teaching English writing revised

- Individual feedback, incl. translation to native language
- Class-level feedback, incl. priorities for next step > lesson plans
- Live classroom dashboard
- Illustrations as motivational tool



### Assignment Submission

Guess what I stumbled upon today? A magical pair of socks! They weren't just your ordinary, run of the mill socks, they sparkled with an otherworldly glow and had tiny, twinkling stars embroidered along the edges. As soon as I slipped them on, I felt an exhilarating surge of energy. Little did I know, these socks held the power of teleportation! With each playful jump while wearing them, I found myself transported to the most incredible places. One moment, I was in a lush, enchanted forest filled with talking animals, and the next, I stood atop a mountain peak, surrounded by swirling clouds. The magical socks turned my everyday adventures into

### Feedback

**Summary:** This imaginative tale of magical socks and their teleportation powers takes the reader on a whimsical journey through fantastical realms. The writer's creativity shines through in their vivid descriptions and engaging narrative.

#### Strengths:

- Great use of adjectives to describe settings and characters, such as 'lush, enchanted forest' and 'whimsical creatures'.
- Excellent sentence structure, varying between short and long sentences to keep the reader engaged.

Edit as needed

### Feedback Tra

**Samenvatting:** Dit fantastische verhaal over magische sokken en hun teleportatiekrachten neemt de lezer mee op een whimsische reis door fantastische werelden. De schrijver's creativiteit straalt door in hun levendige beschrijvingen en boeiende verhaal.

#### Sterke punten:

- Geweldig gebruik van naamwoorden om locaties en personages te beschrijven, zoals 'weelderige, betoverende bossen' en 'whimsical creatures'.
- Uitstekende zinsbouw, variërend tussen korte en lange zinnen om de lezer te boeien.




Imaginator

Select image(s) to send to student





# Wo1

 loveable guide to the Redwood Forest, ready to teach you about this magnificent ecosystem.



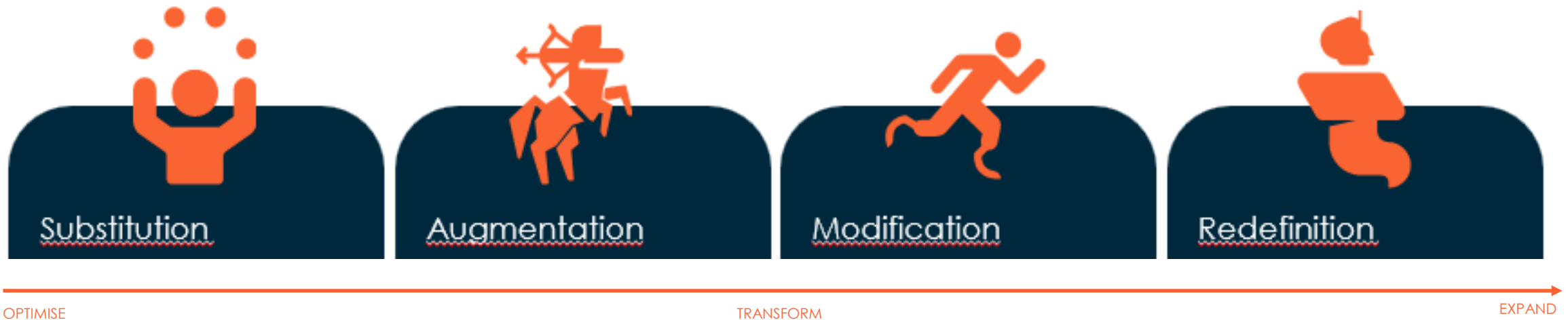
<https://inworld.ai/solutions/training-edu>

# How companies & educators are using Inworld

- ✓ Customer or employing onboarding support
- ✓ On-demand interactive or AR/VR learning and training
- ✓ Lessons by customized teachers (brand mascots or even historical figures!)
- ✓ Language learning practice
- ✓ Tutoring, test prep, and learning support
- ✓ Educators for any scenario: one-on-one tutoring, group instruction, test prep, training simulations, and more

# (Em)powered by AI: SAMR as a lens

Leveraging the capabilities of generative AI in educational media production



# AI capabilities

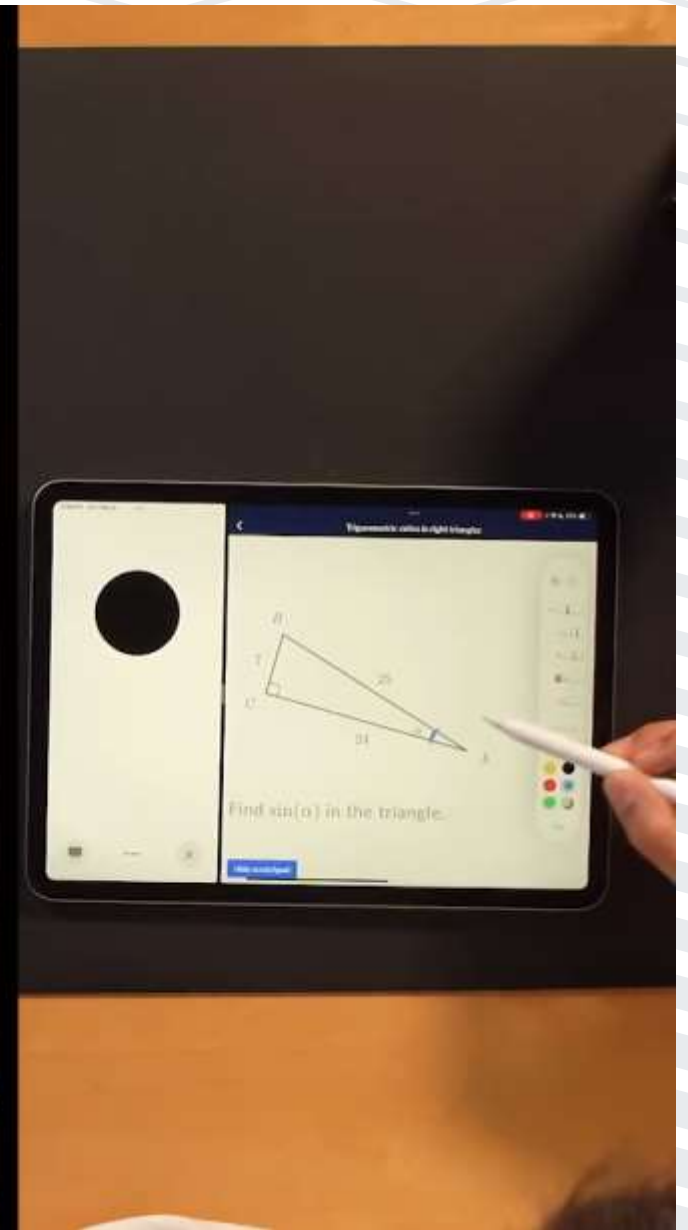
AI Capabilities subcategories allow more detailed structuring of elements.

<b>Computer Vision</b> Image segmentation Object detection and tracking Image classification Emotion recognition 3D reconstruction	<b>Forecasting</b> Time series forecasting Dependency-based forecasting
<b>Computer Audition</b> Speech to text Musical knowledge Sound similarity assessment Source separation Audio-based sentiment analysis	<b>Discovery</b> Segmentation and clustering Anomaly / outlier detection Correlation analysis Causal inference Association analysis
<b>Computer Linguistics</b> Translation Text classification Sentiment analysis Entity recognition Relation extraction Conversational systems	<b>Planning</b> Cooperative multi-agent systems Policy development / Strategic agents Logistics planning Planning and scheduling
<b>Robotics</b> Robot motion planning HD mapping and localization Control optimization Collaborative robotics / human robot interaction Advanced drones Mobile robotics User-adaptive control automation	<b>Creation</b> Audio generation Image generation / manipulation Style transfer Text generation / summarization AI-augmented engineering

# AI capabilities

AI Capabilities subcategories allow more detailed structuring of elements.

<b>Computer Vision</b> Image segmentation Object detection and tracking Image classification Emotion recognition 3D reconstruction	<b>Forecasting</b> Time series forecasting Dependency-based forecasting
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<b>Robotics</b> Robot motion planning HD mapping and localization Control optimization Collaborative robotics / human robot interaction Advanced drones Mobile robotics User-adaptive control automation	<b>Creation</b> Audio generation Image generation / manipulation Style transfer Text generation / summarization AI-augmented engineering





# (Em)powered by AI

Leveraging the unique capabilities of generative AI in educational media production

Discovery, synthesis, creation and adaptation of learning resources

Turning learning data into action > Offering more personalized learning



Substitution

Manueel werk uit handen nemen



Augmentation

Uitvoering taken verbeteren



Modification

Werkwijze van bep. taken aanpassen



Redefinition

Nieuwe manier van lesgeven

OPTIMISE

TRANSFORM

EXPAND

# Context matters

Who do you want to empower?

- Teacher
- Student
- AI

Where & when does learning happen?

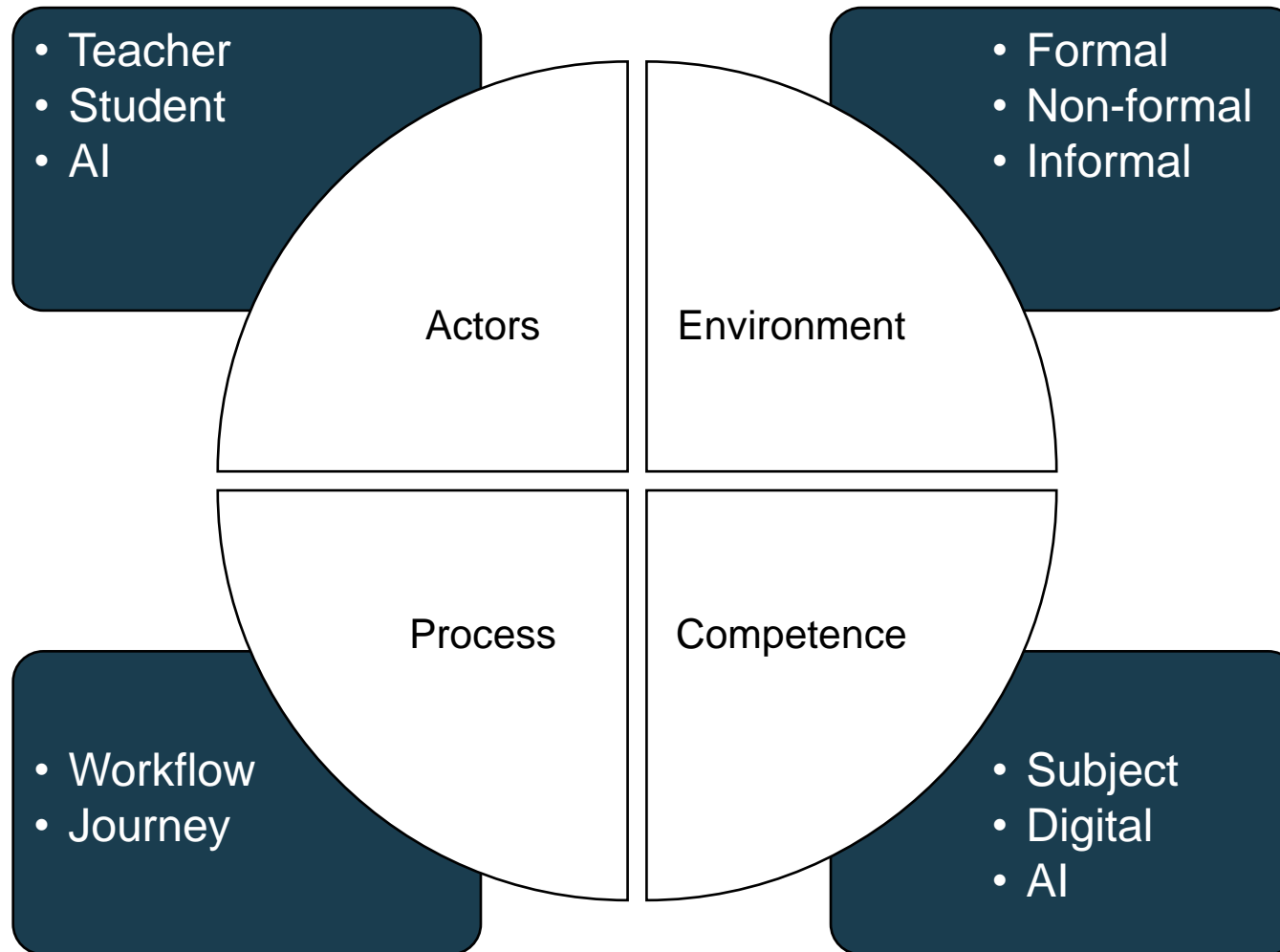
- Formal
- Non-formal
- Informal

What is the current approach?

- Workflow
- Journey

Which competences are (not) present?

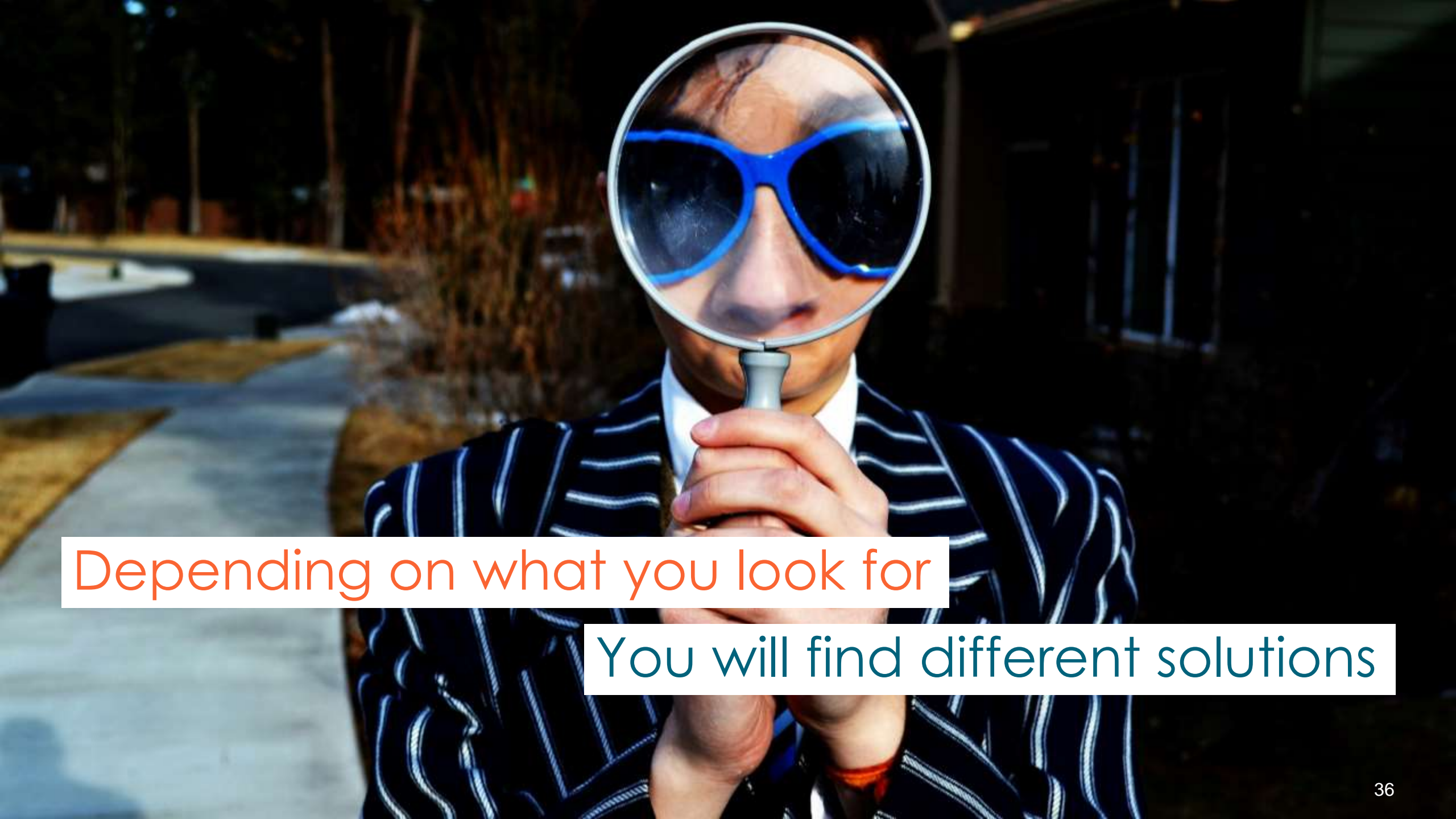
- Subject
- Digital
- AI





Look

And you will find



Depending on what you look for

You will find different solutions



### Substitution

Manual task replacement



### Augmentation

Manual task facilitation



### Modification

Rewiring & customizing methods



### Redefinition

New methods & possibilities

Empowering  
**Teachers**

to engage

Empowering  
**Students**

to learn

Empowering  
**AI**

to act autonomously

EXPANSION

TRANSFORMATION

EXPANSION

# Join the discussion

**How might we empower teachers and students with GenAI?**

- > What do you see as meaningful applications?
- > What are key competences that require support?

# Thanks & let it grow

Contact:

[Lizzy.Bleumers@thomasmore.be](mailto:Lizzy.Bleumers@thomasmore.be)

