

# Generative AI Competences for Higher Education Lecturers

## Towards an Extension of Existing Frameworks

**Isabelle F. Geppert<sup>1</sup>, Kerstin Denecke<sup>2</sup>, Daniel Reichenpfader<sup>2</sup> & André Klostermann<sup>1</sup>**

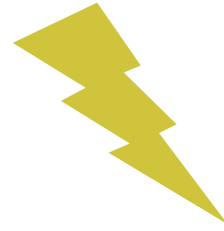
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# Introduction

Generative AI (genAI) tools are rapidly transforming higher education (HE, Chan, 2023; Walczak & Cellary, 2023)

novel, human-like content, interactive experiences and wide range of applications (Feuerriegel et al., 2024; Lv, 2023)



concerns about academic integrity, over-reliance, and decline of key cognitive skills (Farrokhnia et al., 2023; Kasneci et al., 2023)

These challenges underline the need for clear governance as well as new competences for educators (Feuerriegel et al., 2024)

# Current State of Research

## Digital / AI competence framework for HE:

- European Framework for the Digital Competence of Educators (DigCompEdu, Redecker, 2017)
  - AI Supplement (Bekiaridis & Attwell, 2024)
- UNESCO AI Competency Framework for Teachers (Miao & Cukurova, 2024)

**No genAI-specific framework yet for HE lecturers**

First step: Annapureddy et al. (2025) propose a genAI competence framework for educators, policymakers, and government official

# Study Objective

Identify the competences required by HE lecturers to proficiently integrate genAI tools in HE

# Method

## Procedure & Data Analysis

### 1<sup>st</sup> Round

open-ended  
questionnaire

qualitative content  
analysis

(Kuckartz, 2018)

- Deductive:  
DigCompEdu
- Inductive:  
based on data



### 2<sup>nd</sup> Round

Relevance rating of  
these competences  
for genAI in HE

0.3-quantile analysis  
(rated as at least  
relevant; 5 or 6)



### 3<sup>rd</sup> Round

Sorting and  
clustering of relevant  
competences

# Methods

## Participants

### Expert groups:

- HE professionals currently working with genAI in their profession
- HE lecturers who have already integrated genAI into their teaching
- genAI experts involved in the development and application of genAI tools for HE

### 1<sup>st</sup> Round

21 participants

- 13m, 8f
- 47.6% 30-39 years
- 52.4% university staff members

### 2<sup>nd</sup> Round

17 participants

- 10m, 7f
- 58.8% 30-39 years
- 64.7% university staff members

# Results

## 1. Round: Qualitative content analysis

	Overall	Preparing	Teaching	Assessing	Evaluating
#	75 competences	30 competences	29 competences	26 competences	14 competences
1.	application expertise	prompt competence	application expertise	data protection and copyright compliance when using genAI	data protection and copyright compliance when using genAI
2.	prompt competence	application expertise	prompt competence	use genAI for learning assessment and evaluation	apply genAI for learning analytics
3.	critically evaluate and refine the didactic use of genAI in teaching	data protection and copyright compliance when using genAI	consider learners' capabilities and challenges when using genAI	develop and test new assessment formats and methods	

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## 2. Round: Relevance rating

### High overall relevance

- **59–80%** of competences: *Mdn*  $\geq 5$
- **30–64%** of competences met  $\geq 70\%$  relevance threshold

### Top-rated competences:

- analytical skill to assess the reliability and quality of genAI outputs and its sources
- critically evaluate and refine the didactic use of genAI in teaching
- critical thinking

# Results

## 3. Round: Competence taxonomy

<b>Application competence</b>	<b>Reflection and evaluation competence</b>	<b>Professional competence</b>	<b>Design competence</b>	<b>Personal competence</b>	<b>Supporting competence</b>
Didactic integration	Critical output assessment	Didactic-technological understanding	Didactical design regarding genAI	Responsibility & Integrity	Didactic-methodological design
Prompt design and control	Evaluation of didactic use	Data and information skills	Innovative application	Guiding the Learning Process	General analytical skills
Problem-solving skills	Self-reflection & ability to judge	Technical expertise	Transparent assessment and performance criteria	Self-Management	Technical core competence
Media educational design	Opportunity/risk assessment	Contextual knowledge	Initiating and implementing change	Communication & Collaboration	Digital and media literacy
Teaching skills			Creativity		Research methodology
					Innovation expertise

# Discussion

GenAI in HE requires genAI-specific, digital and pedagogical competences

Taxonomy expands and aligns with existing competence frameworks

- integrates affective dimensions and unique hierarchical structure
- shared focus of competences with Annapureddy et al. (2025)
  - specific emphasis on HE didactic requirements

# Implications & Future research

Foundation for genAI competence development of HE teachers

- balance operational and critical evaluation competences
- Strengthen reflective, ethical and responsible attitudes

Prerequisite steps before developing training programs:

- Validate structure of the competence taxonomy
- analyse mechanisms underlying genAI-related competence acquisition



# Structured Discussion

## Competence taxonomy

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# Thank you & Contact



**Isabelle F. Geppert**  
PhD student  
University of Bern, Switzerland  
[Isabelle.geppert@unibe.ch](mailto:Isabelle.geppert@unibe.ch)



Kerstin Denecke  
Bern University of Applied Sciences, Switzerland



Daniel Reichenpfader



André Klostermann  
University of Bern,  
Switzerland