

# Lehrwende

## Rethinking Higher Education in the Age of Generative AI

Executive Summary – Roland Böttcher – 2026

### Core Thesis

Generative AI does not represent incremental technological change but marks an epistemic rupture: it decouples the academic product from the cognitive process that produces it. As a result, examinations, certifications, and the very concept of demonstrated competence lose their foundational basis. The challenge is not that students use AI – but that the inferential link between artefact and understanding is categorically broken.

### Four Parallel Crises

- **Cognitive Crisis:** AI-assisted work produces cognitive offloading, impairs memory consolidation, and distorts metacognitive self-assessment. Students systematically overestimate their own understanding (illusion of competence).
- **Competence Crisis (Deskilling):** Two distinct problem types emerge: Never-Skilled (students who never independently acquire foundational competencies) and De-Skilled (loss of previously acquired competencies through AI delegation). The university acts as an institutional amplifier of this dynamic.
- **Motivational Crisis:** AI undermines all three basic needs of Self-Determination Theory – autonomy, competence, and relatedness – generating functional dependency rather than intrinsic learning motivation.
- **Assessment Crisis:** Reproductive examination formats lose their validity. Neither defensive strategies (AI detection, proctoring) nor purely AI-resistant formats resolve the fundamental problem. What is required are AI-integrative assessment designs that make the learning process visible.

### Crisis of Academic Knowledge Transmission

The university's information monopoly is broken. When AI can explain subject matter at any time, the lecture as a transmission format becomes redundant. The consequence is a paradigm shift: from transmission to transformation, from knowledge delivery to competence development. Educators become architects of learning – no longer suppliers of information.

### Labour Market and Employability

The myth of workplace learning as compensation for university deficits is empirically refuted. Simultaneously, professional development pathways erode, and degrees lose their signalling value. The curricular consequence: conceptual depth, metacognition, and epistemic responsibility must move to the centre – as capabilities that AI cannot substitute.

### Institutional Barriers to Transformation

As expertocracies, universities are structurally resistant to change: academic freedom fragments governance capacity, temporal constraints prevent didactic investment, path dependencies cement existing formats, and missing incentives turn teaching innovation into an unrewarded individual effort.

### Proposed Solution: AI-Integrated Problem-Based Learning

The book develops AI-integrated PBL as a comprehensive institutional response. It addresses all four diagnosed crises simultaneously: cognitive activation through authentic problems, making the learning process visible rather than assessing products, restoring intrinsic motivation through autonomy and competence experience, and process-oriented assessment formats that transparently embed AI use rather than prohibiting it.

### Strategic Consequences

<b>Without Transformation</b>	Functional disintegration: knowledge transmission migrates to AI platforms, certification to external providers, research decouples from teaching. Educational inequality deepens.
<b>Core Mission</b>	Developing epistemic agency: the capacity to independently justify knowledge claims, evaluate evidence, and assume intellectual responsibility.
<b>Investment Focus</b>	Small seminars over mass lectures, mentoring relationships over content delivery, research participation over passive reception, community building over efficient certification.

**Non-Substitutable**

Three dimensions remain AI-resistant: disciplinary socialisation into epistemic communities, identity formation through productive difficulty, and relational learning through human relationships.

*“The question is not whether change is necessary. The question is whether universities will actively shape this change or passively endure it.”*