



Reimagining Teaching Portfolios Through Personal Knowledge Management with Digital Tools for Thought

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1. The Challenges

Teaching portfolios under strain and why generative AI sharpens the strain

Why Teaching Portfolios are Under Strain

- Portfolios serve (at least) **two functions** at once:
 - professional **development** (reflective integration of experience) and
 - **Showcasing** / impression management (credible presentation to committees) (Seldin et al., 2010)
- Under evaluative pressure the developmental function can hollow out (FitzPatrick & Spiller, 2010; Siegel et al., 2025)
- **Generative AI** turns this tension into a credibility/**validity problem**: LLMs now produce fluent reflective prose at negligible cost (e.g., Dawson et al., 2024; Siegel & Arnold, submitted)

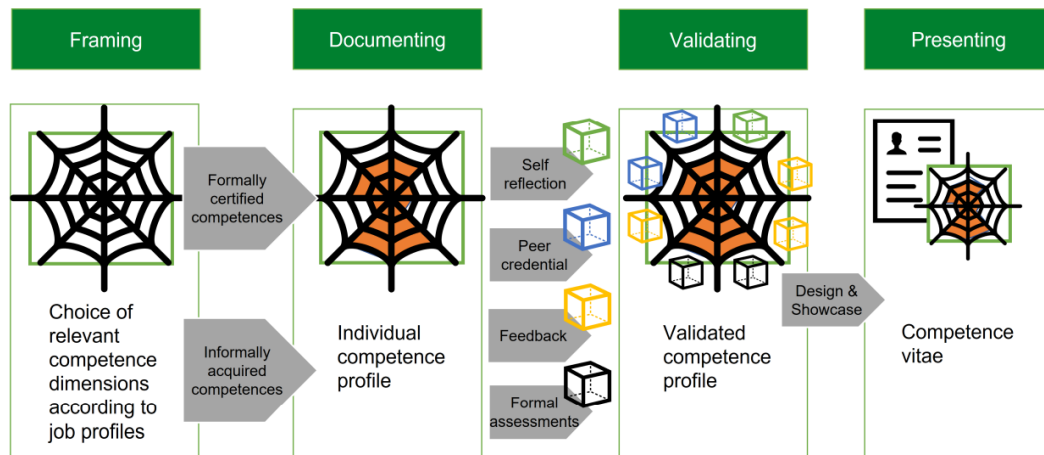
Guiding Questions

1. How can **personal knowledge management** with **digital tools for thought** help faculty to create **teaching portfolios** to **frame, document, present, reflect on**, and **improve** their **teaching competences**?
2. How do the **affordances** and **risks** of **digital tools for thought** and of **generative AI** bear on that **quality** of the **portfolio** and **professional development**?

2. Conceptual Grounding

A Teaching Portfolio is More Than a Collection of Artifacts





(Dilger & Strate, 2024-2025)

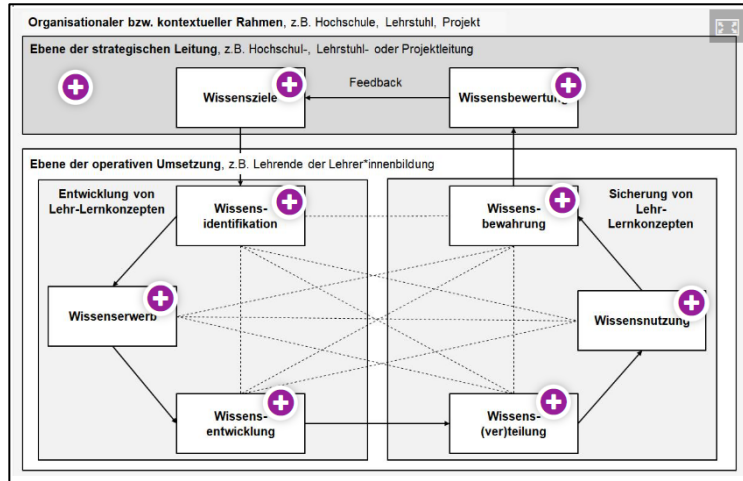
(Dilger & Strate, 2025;
Siegel et al., 2025; Siegel et al., 2026)



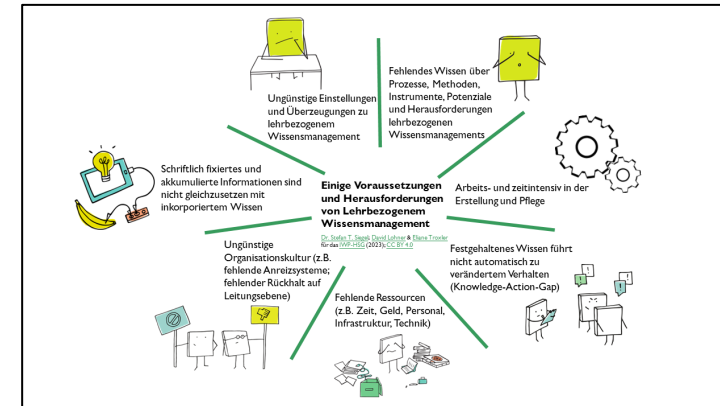
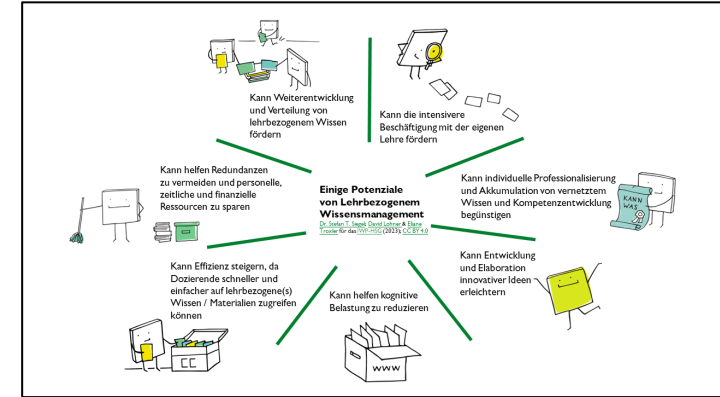
Teaching-related Knowledge Management is Multifaceted and Can Support Teachers in Preparing, Conducting and Evaluating Teaching and Their Professional Development



<https://www.alexandria.unisg.ch/handle/20.500.14171/119879>



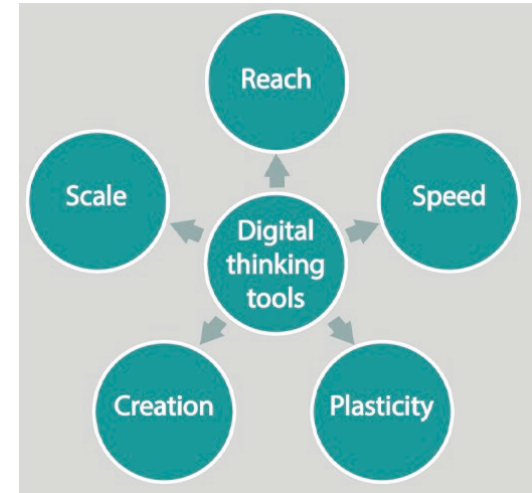
Teaching is at core knowledge work!



What are (Digital) Tools for Thought and How Can They Facilitate the Knowledge Work of Teachers (and Continuous Professional Learners)?



Key Affordances of Digital TftTs



Five properties of digital tools, Paul Piwek and Richard Walker (2020),
<https://www.open.edu/openlearn/mod/oucontent/view.php?id=95226§ion=3>

3. (Co-)Constructing Teaching Portfolios

With / By / Despite Tools for Thought such as Generative Artificial Intelligence

A Knowledge-Centered Approach to Developing Teaching Competences with Digital Tools for Thought



Stefan T. Siegel¹, David Lohner² & Maik Arnold³

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Abstract

In higher education, teaching portfolios are instruments for faculty professionalization and academic development. Many lecturers struggle to systematically document, evaluate, and further develop their teaching competencies. We argue that teaching is knowledge work requiring intentional knowledge management. We explore how digital Tools for Thought (TfTs) support personal knowledge management (PKM), enabling lecturers to externalize, link, and reflect on teaching-related knowledge and materials. Using TfTs, teaching portfolios transform from static repositories into dynamic systems fostering critical reflection and evidence-informed professional development. Drawing on educational psychology and higher education research, we demonstrate how PKM practices can boost teaching competence.

Keywords

academic development; teaching portfolio; digital tools for thought; personal knowledge management; teaching competence

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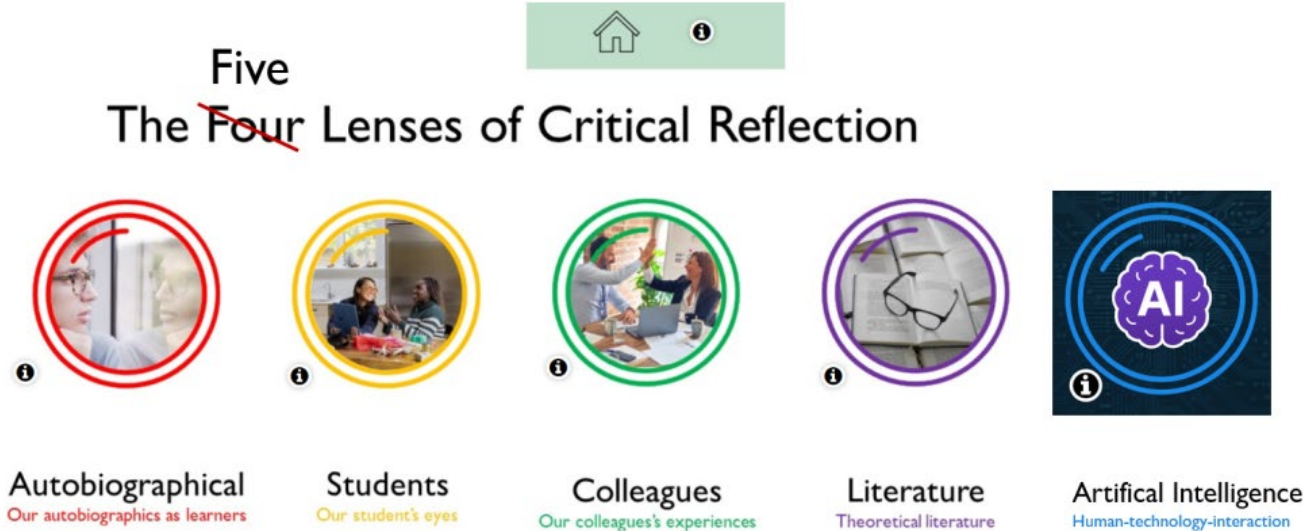
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Think First – genAI Second – Think Again. Invite (gen)AI to the Table but Use Multiple Forms of Evidence



<https://app.Lumi.education/content/6499b5e8189f7999ba9f3c5b>

Generative AI's Affordances and Risks Attach to the following Design Princ

Design principle	Affordance of using TfTs / genAI	Paired risk
1. Evidentiary grounding	Synthesis & pattern detection across feedback, evaluations, analytics	Fabricated "evidence"; pseudo-objective summaries taken unexamined
2. Coherence	Structuring, linking, retrieval across artefacts and semesters	Draft proliferation; modular passages that don't argue with one another
3. Authorial voice	Articulation support: counter-questions, reframings, revision	Simulated reflection; homogenised prose; erosion of ownership
4. Alignment with purpose	Translation between practice and formal competence descriptors	Criterion-conformity without practice; the evaluative signal collapses
5. Developmental orientation	Offloading routine labour, freeing capacity for higher-order work	Deskilling; the efficiency trap - production accelerates, development stalls
6. (Automatic) text generation	autocompletion helps struggling writers find words and write coherent-sounding text	AI only simulates algorithmic understanding

(Siegel & Arnold, under review)

<https://www.ai-ostschweiz.ch/blog/categories/use-case>



(Siegel, Arnold & Lohner, 2026)

Über den Use Case

Titel	Ko-Konstruktion von Lehrportfolios mit genKI: Lehrkompetenzen erfassen, entwickeln, validieren und präsentieren
Hintergrund / Kontext	Lehrportfolios sind zentrale Instrumente der hochschuldidaktischen Kompetenzentwicklung von Hochschullehrenden. GenKI bietet hierfür neue Möglichkeiten, Lehrkompetenzen zu dokumentieren, zu reflektieren, zu validieren und zu präsentieren, ohne auf oberflächliche Hochglanzdokumente reduziert zu werden. Dieser Use Case soll Lehrenden aufzeigen, wie GenKI gezielt, kritisch und verantwortungsvoll in die Portfolio- und Lehrkompetenzentwicklungsarbeit integriert werden kann. Als Leitprinzipien gelten dabei Evidenzinformierung, epistemische Integrität und menschliche Autorschaft/Authentizität.
Lernziel(e)	• LZ1: Die Lehrenden können GenKI-Tools gezielt für ausgewählte Portfolioaufgaben einsetzen (Framing, Dokumentieren, Reflektieren, Validieren, Präsentieren von Lehrkompetenzen). • LZ2: Die Lehrenden können Chancen und Risiken des GenAI-Einsatzes abwägen und begründet entscheiden, wann dies sinnvoll und wann nachträglich sein kann. • LZ3: Die Lehrenden können authentische Portfolioartefakte ko-konstruktiv mit genKI-Tools erstellen, die ihre Lehrkompetenzen reflektieren, ohne menschliche Autorschaft an KI-Systeme abzugeben. • LZ4: Die Lehrenden können ihren KI-Einsatz transparent dokumentieren und ethisch begründen (u.a. Datenschutz, Autorenschaft, Integrität).
Zielgruppe	- Lehrende an Hochschulen und Universitäten; Dozierende in hochschuldidaktischen Weiterbildungsprogrammen; Hochschulentwickler*innen; Berufungskommissionen.
Phase	☒ Vorbereiten ☒ Durchführen ☒ Evaluieren ☒ Prüfen ☒

Dashboard

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Dashboard

Erste Schritte

> 01_Lehrphilosophie

> 02_Lehrveranstaltungen

> 03_Reflexionen

> 04_Feedback

> 05_Entwicklung

> 06_Materialien

> 07_Portfolio-Ausgabe

> Templates

Teaching-Portfolio

?

⚙

Dashboard

🏠

Mein Lehrportfolio

📌

Schnellzugriff

Bereich	Beschreibung
📁 Lehrphilosophie	Meine pädagogischen Überzeugungen & Werte
📚 Lehrveranstaltungen	Alle Kurse, Syllabi, Lernziele
💡 Reflexionen	Laufende Lehrreflexionen & Journaleinträge
💬 Feedback	Studierenden-, Peer- & Selbstfeedback
🚀 Entwicklung	Weiterbildungen, Ziele, Meilensteine
📁 Materialien	Lehrproben, Medien, Innovationen
🎤 Präsentationsportfolio	Kuratierte Version für externe Zwecke

🔄

Aktueller Status

0 Rückverweise

✍

205 Wörter

2.004 Zeichen

✖



4. Implications & open questions

Preliminary Implications for Academic Development

For lecturers:

- **AI-competences** for eliciting, verifying, and bounding machine contributions (Bass et al., 2025)
- **Preserve friction / desirable difficulties** in teaching portfolio and competence development
- maintain the **portfolio as a dynamic, co-constructed knowledge system**, not a deadline artefact; Siegel et al., 2025; Siegel & Arnold, submitted)

For academic developers:

- **Address affordances and risks of genAI explicitly** in academic development programmes (legitimate uses, verification routines, disclosure conventions, tensions)
- embed it in existing structures rather than a bolted-on workshop
- shift assessment criteria from prose quality toward specificity of **evidence** and visibility of **process** (e.g., Dawson et al., 2024)

For hiring committees:

- Consider focusing more on costly-to-simulate evidence (recorded teaching, peer observation, ...)

Conclusion, Limitations and Research Gaps

Conclusion

- Teaching portfolios will **most likely survive** genAI; however, their development and evaluation will probably change
- They can be **rethought as dynamic human-machine knowledge systems** with **paired affordances and risk**

What we don't yet know:

- (1) **faculty practice**: how lecturers actually divide portfolio work with AI, and with what developmental effects (e.g., cognitive offloading)
- (2) the **assessor side**: how committee members read teaching portfolios currently and what counts as credible evidence
- (3) **longitudinal effects** of sustained AI use on professional identity and judgement



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