Herausforderungen einer postdigitalen Didaktik von Lernumgebungen

Berufungsvortrag W3 Professur Didaktik digitaler Lernumgebungen, 3.11.2022

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mkalz

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GRUNDLAGEN: LMS & CMS

Marco Kalz, Sandra Schön, Martin Lindner, Detlev Roth und Peter Baumgartner

Systeme im Einsatz

Lernmanagement, Kompetenzmanagement und PLE

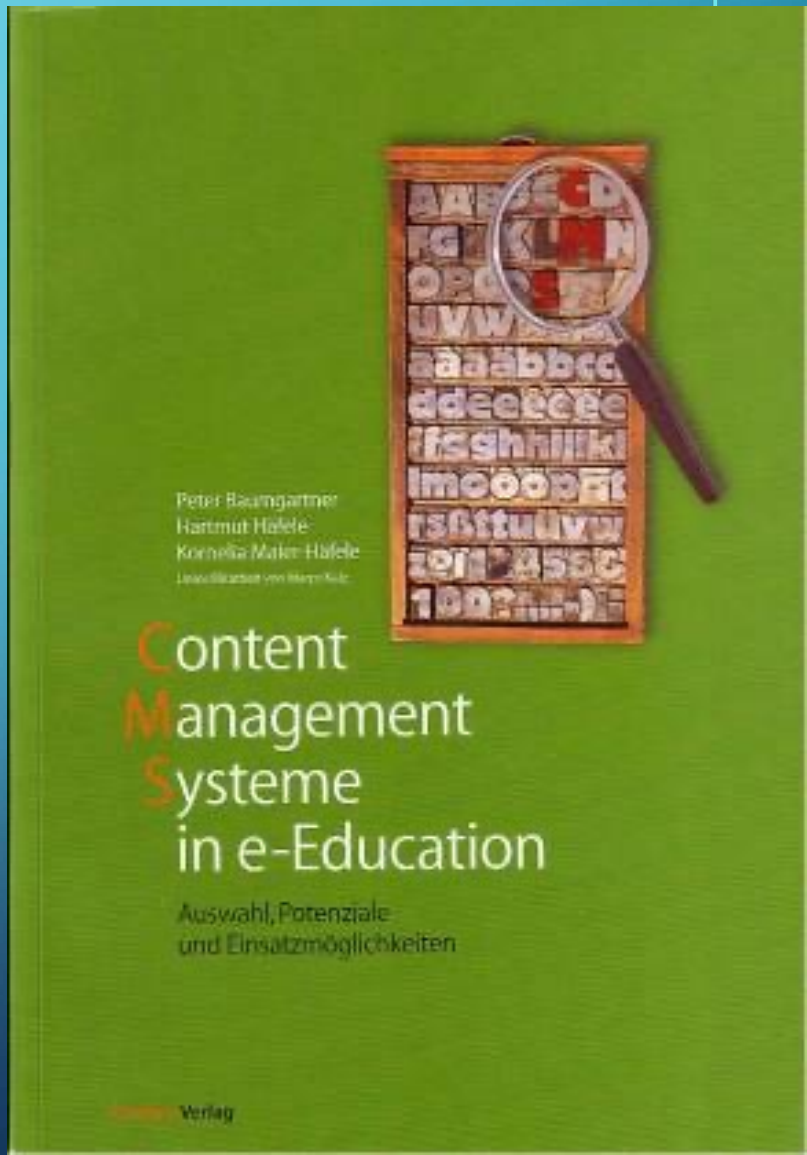
Dieser Beitrag stellt drei Formen von technologischen Systemen vor, die derzeit im Bereich des Lernens und Lehrens eingesetzt bzw. diskutiert werden. Weit verbreitet sind Lernmanagementsysteme (LMS), die zur Verwaltung von Lernenden und Kursabwicklung in (Hoch-) Schulen genutzt werden. Jünger sind die Kompetenzmanagementsysteme (KMS), die vor allem in Unternehmen Prozesse der Kompetenzentwicklung unterstützen und dokumentieren sollen. In den letzten Jahren hat schließlich ein neues Konzept des webbasierten persönlichen Informations- und Lernmanagement an Aufmerksamkeit gewonnen, die sogenannten „Persönliche Lernumgebungen" (engl. „personal learning environment", kurz PLE). In diesem Beitrag werden keine technologischen Herausforderungen und Lösungen, sondern die praktischen Anforderungen und Wirkungen des Einsatzes der Systeme aus pädagogischer bzw. praktischer Perspektive betrachtet.

Quelle: Peter Morgan
http://www.flickr.com/photos/moogan/3242890481/
[2010-12-10]

L3T Lehrbuch für Lernen und Lehren mit Technologien
http://l3t.eu
M. Ebner und S. Schön (Hrsg.)

#systeme
#einfuehrung
#paedagogikpsychologie

Version vom 26. April 2011



GRUNDLAGEN: OER & OPEN EDUCATION

J Comput High Educ
DOI 10.1007/s12528-017-9143-3

EDITORIAL

Editorial for the special issue on advancing research on open education

Marco Kalz[1] · Mohammad Khalil[2] · Martin Ebner[2]

Univ Access Inf Soc (2016) 15:329–343
DOI 10.1007/s10209-014-0391-y

LONG PAPER

Mobile authoring of open educational resources for authentic learning scenarios

Bernardo Tabuenca · Marco Kalz · Stefaan Ternier · Marcus Specht

Published online: 16 November 2014

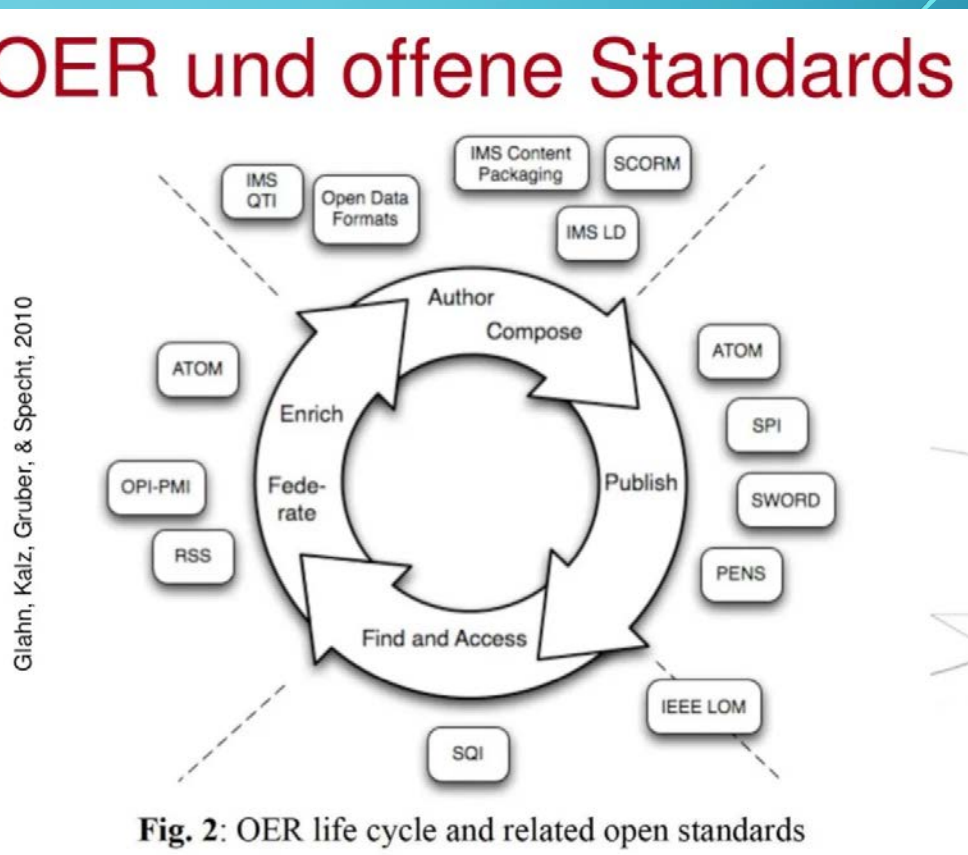


Fig. 2: OER life cycle and related open standards

Kalz, Khalil, & Ebner, 2017

Glahn, Kalz, Gruber, & Specht, 2010

Tabuenca, Kalz, Ternier, & Specht, 2017

PLE

Persönliche Lernumgebungen: Grundlagen, Möglichkeiten und Herausforderungen eines neuen Konzepts

von Sandra Schaffert (Salzburg Research) und Marco Kalz (Centre for Learning Sciences and Technologies, Open University of the Netherlands)

Selbstorganisiertes Lernen · Personal Learning Environment · Persönliche Lernumgebung · Social Software · Bildungstechnologie · Lern-Management-System Schlagworte

Wie gelernt und gelehrt wird, ist nicht allein eine Frage der verwendeten Technologie, wird jedoch von ihr beeinflusst. Die Entwicklung und der wachsende Erfolg von partizipativen Anwendungen im Internet (englisch: »Social Software«) wie Wikis und Weblogs führten zur Innovation technologiegestützten Lernens: Unter dem Begriff der »Persönlichen Lernumgebung« (englisch: »Personal Learning Environment«, abgekürzt PLE) setzt sich ein neues Konzept deutlich von den traditionellen Realisierungen Überblick

PLE in Formal Education: Challenges for Openness and Control

Marco Kalz

Abstract This short comment reflects on a critical account of educational technology and makes reference to the chapter by Vieritz et al. about the use of widget bundles for formal learning in higher education.

Introduction

Personal Learning Environments (PLEs) have been intensively discussed since the introduction of the concept without an agreement about their definition and concrete focus. In its early development phase PLE has been introduced as learning

Mash-Up Personal Learning Environments (MUPPLE'10)

Fridolin Wild, Marco Kalz, Matthias Palmér (Eds.)

Workshop in conjunction with the 5th European Conference on Technology-Enhanced Learning (ECTEL'10): Sustaining TEL

Mash-Up Personal Learning Environments (MUPPLE'09)

Fridolin Wild, Marco Kalz, Matthias Palmér, Daniel Müller (Eds.)

Workshop in conjunction with the 4th European COnference on Technology-Enhanced Learning (ECTEL'09): Synergy of Disciplines

Mash-Up Personal Learning Environments (MUPPLE'08)

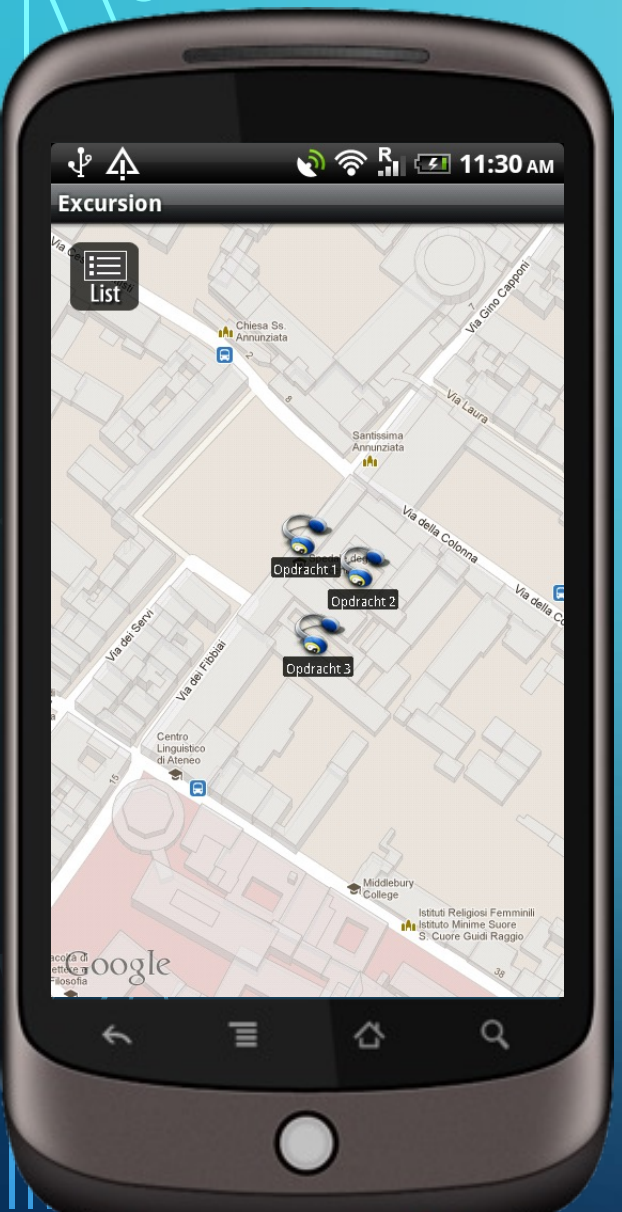
Fridolin Wild, Marco Kalz, Matthias Palmer (Eds.)

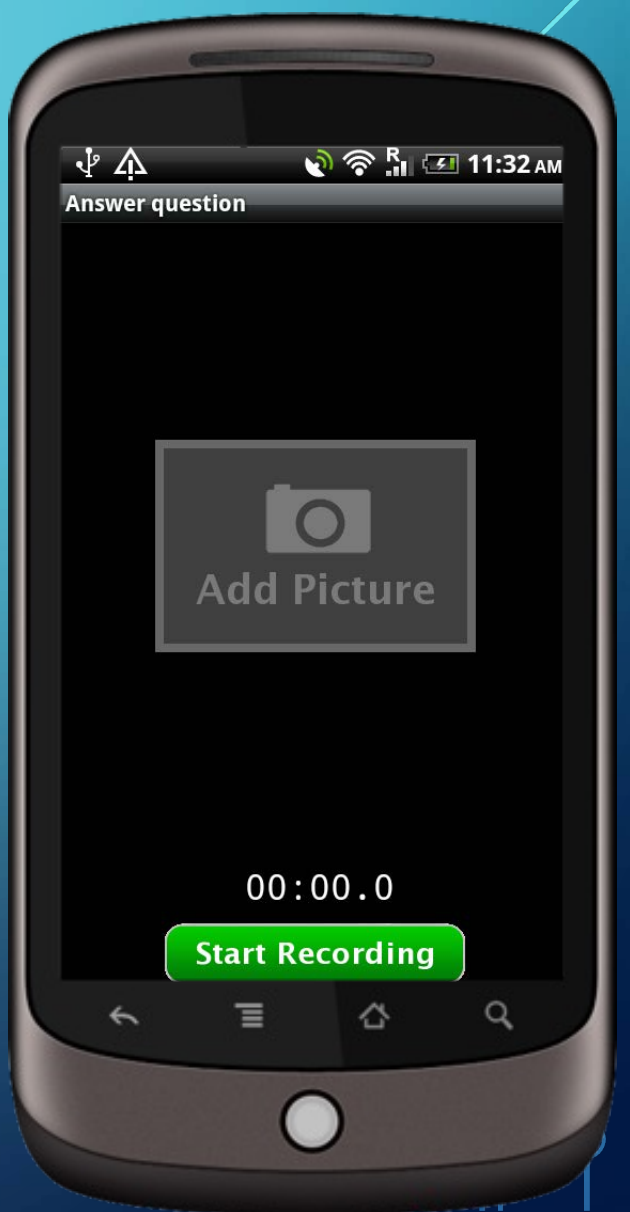
Workshop in Conjunction with the 3rd European Conference on Technology-Enhanced Learning (ECTEL'08): Times of Convergence

MOBILE LERNUMGEBUNGEN: DIE WELT ALS CAMPUS

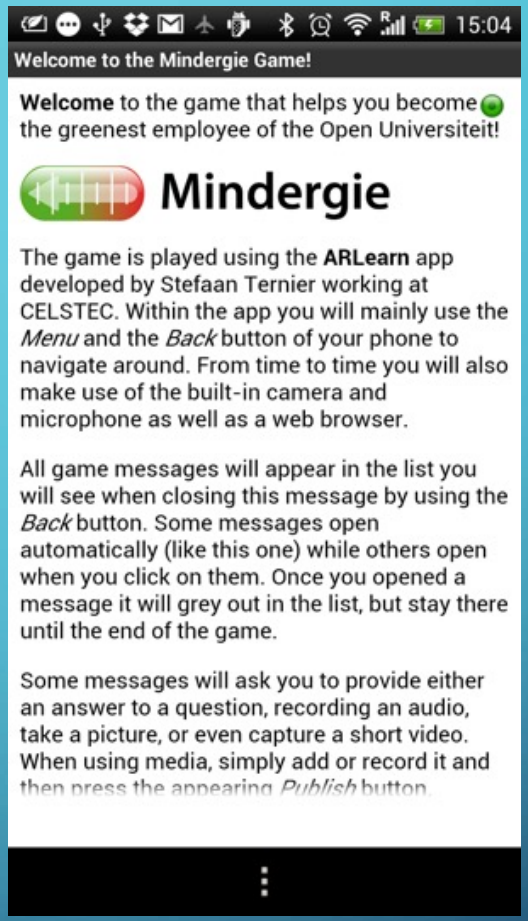
Ternier, S., Klemke, R., Kalz, M., Van Ulzen, P., & Specht, M. (2012). ARLearn: augmented reality meets augmented virtuality. *Journal of Universal Computer Science-Technology for learning across physical and virtual spaces*, *18*(15), 2143-2164.

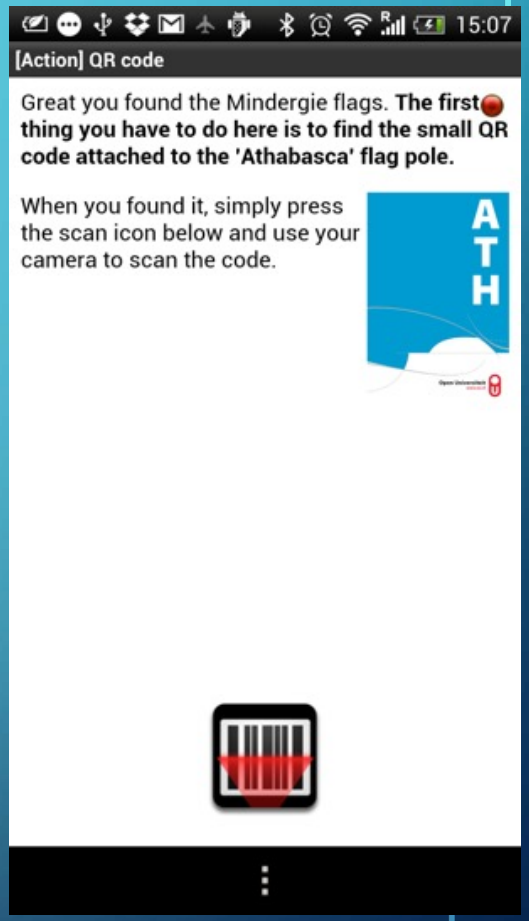
MOBILE LERNUMGEBUNGEN: DIE WELT ALS CAMPUS





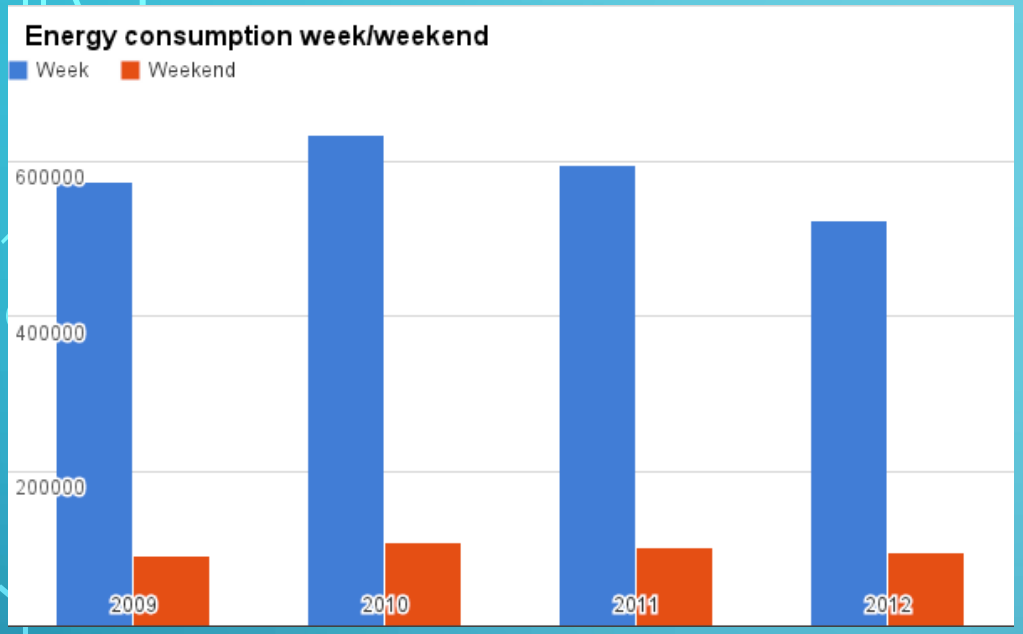
HYBRIDE LERNUMGEBUNGEN

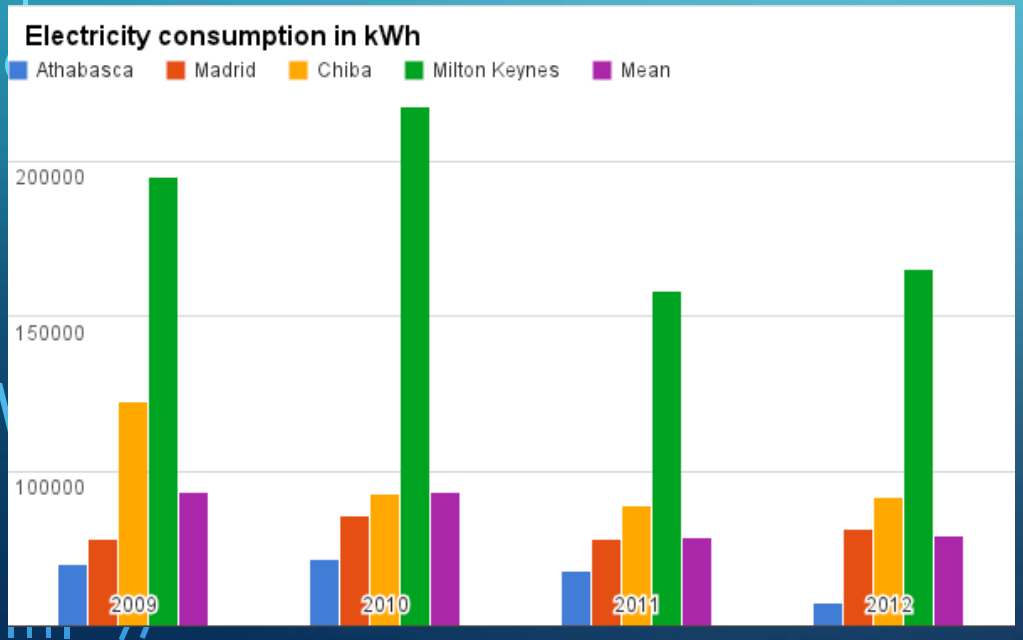


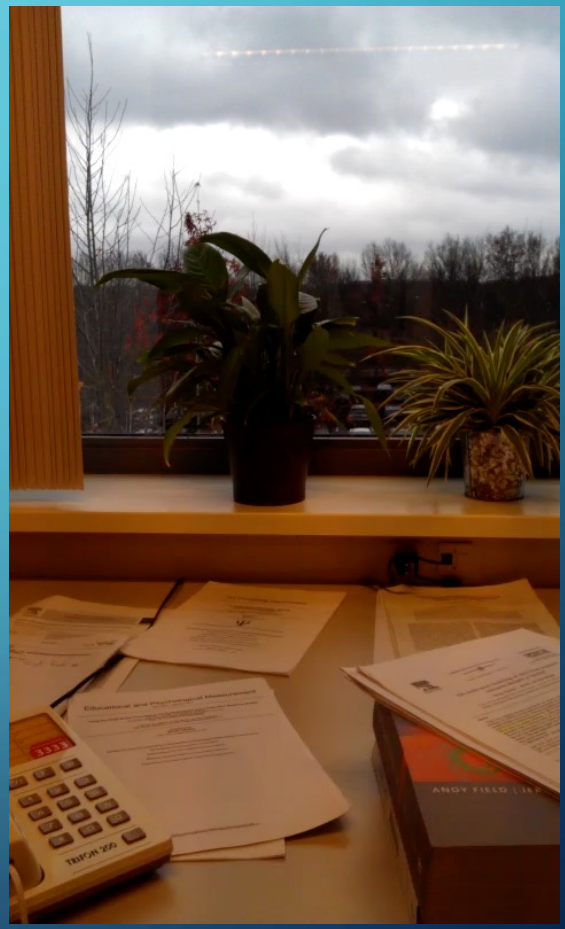


Kalz, M., Börner, D., Ternier, S., & Specht, M. (2015). Mindergie: A pervasive learning game for pro-environmental behaviour at the workplace. In *Seamless learning in the age of mobile connectivity* (pp. 397-417). Springer, Singapore

HYBRIDE LERNUMGEBUNGEN







MOOCS: SKALIERUNG VON FEEDBACK

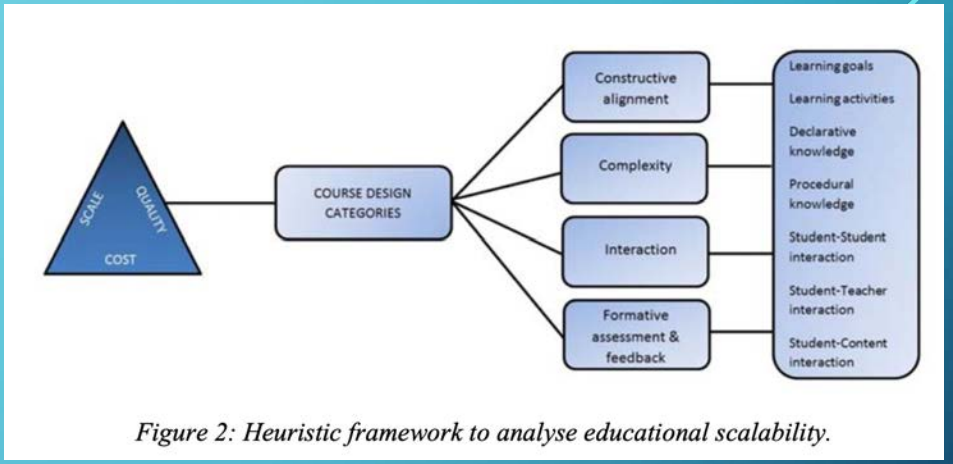
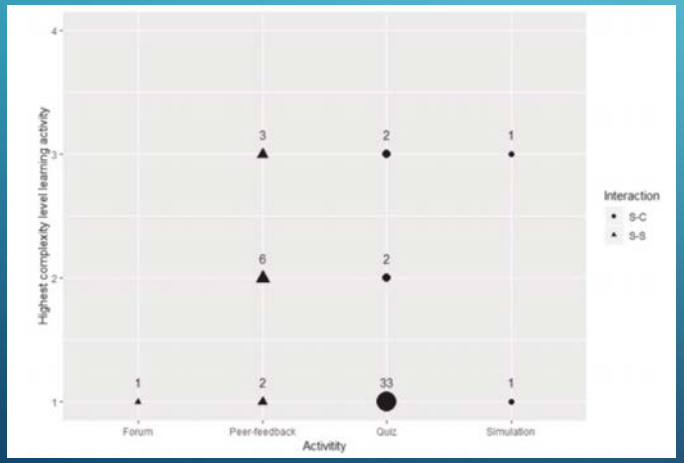


Figure 2: Heuristic framework to analyse educational scalability.

Kasch, J., Van Rosmalen, P., & Kalz, M. (2017)

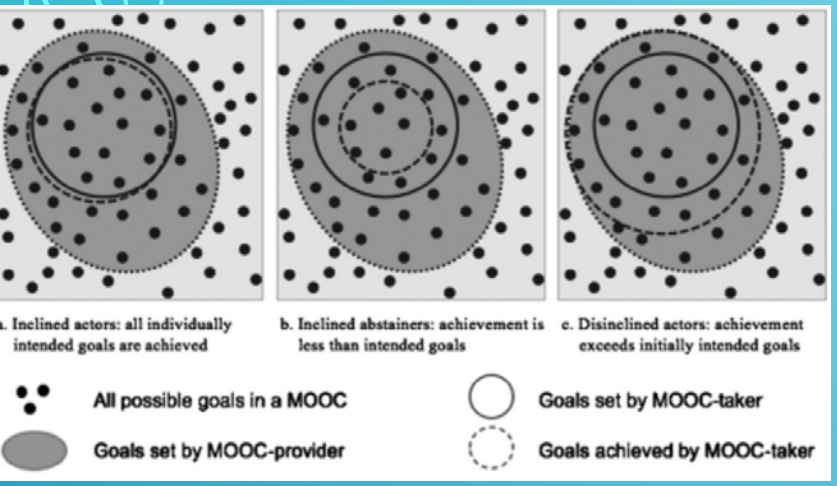


Kasch, van Rosmalen & Kalz, 2020

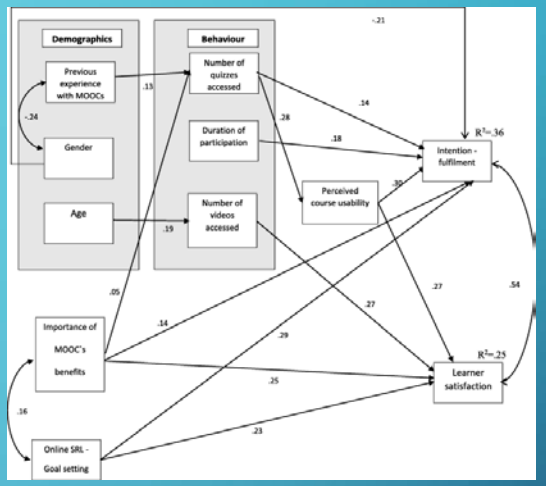
Examples of scalable best practices (student-content)

- Automated elaborated feedback in MCQs
- Video-based hints on request
- Adding support material to MCQs with feedback
- In case of incorrect answers, reference is given to course material/videos (feed-forward)
- Peer-feedback

MOOCS: LERNERFOLG IN NON-FORMALEN LERNUMGEBUNGEN



Henderikx, Kreijns, & Kalz (2017)



Rabin, Kalman, & Kalz (2019)

Factor 1	**Social interactions:** These are issues to learning in MOOCs that learners perceive as being caused by the online environment such as a lack of interaction with peers and instructors, the lack of collaboration with other learners, feeling isolated or preferring face-to-face learning.
Factor 2	**Academic skills:** Learners perceive barriers to learning in MOOCs due to a lack of basic academic skills related to writing, reading typing and information literacy.
Factor 3	**Content related issues:** This factor is concerned with issues that are related to the content of the MOOC that can be experienced as barriers by learners, such as the unavailability of learning materials, a low quality of the learning materials or the lack of clear instructions in the MOOC.
Factor 4	**Technical skills and problems:** Learners experience barriers to learning in MOOCs due to their lack of technical skills or technical problems such as technical problems with the pc or the internet or their unfamiliarity with online learning tools, lack of skills using the delivery system or lack of software skills.
Factor 5	**Situational issues:** This factor is concerned with the extent to which learners experience barriers relating to a lack of time in general, family or work issues or interruptions during their study time.
Factor 6	**Individual motivation:** These are issues relating to learner motivation while learning in the less supported learning environment of a MOOC, such as procratination, lack of motivation or the own responsibility for learning.

Henderikx, Kreijns, Xu, & Kalz, 2021

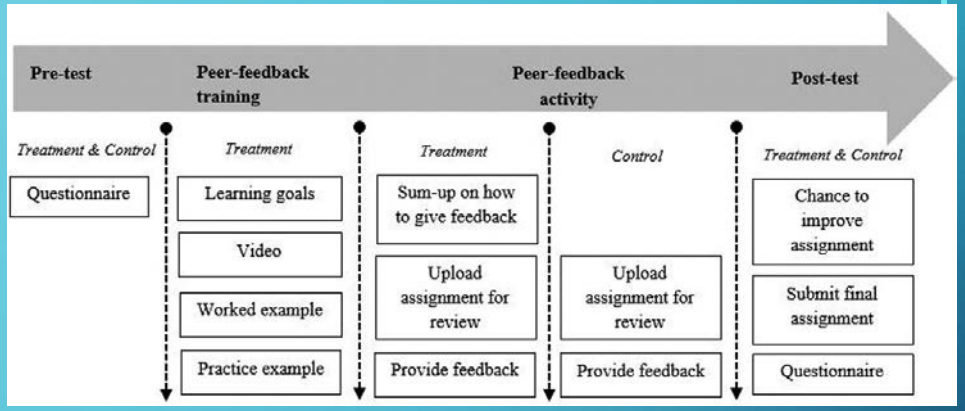
FORMATIVES FEEDBACK & ASSESSMENT

3

THE PROMISE AND POTENTIAL OF E-ASSESSMENT FOR LEARNING

Eric Ras, Denise Whitelock, and Marco Kalz

Ras, Whitelock, & Kalz (2016)



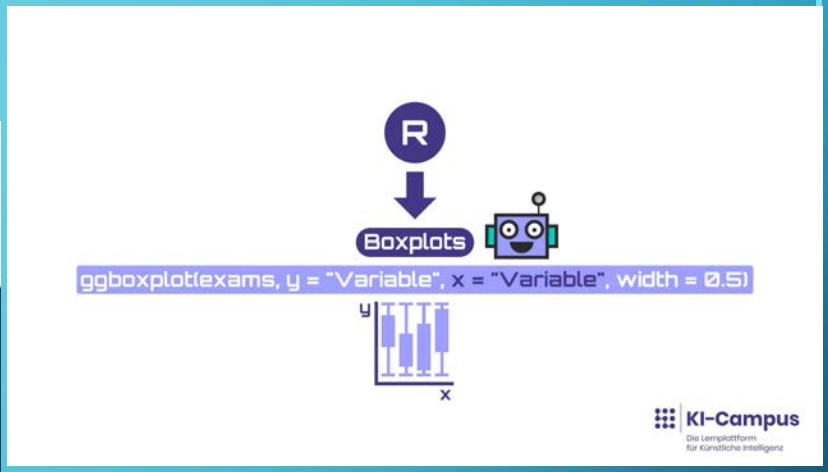
Kasch et al., Kalz (2021)

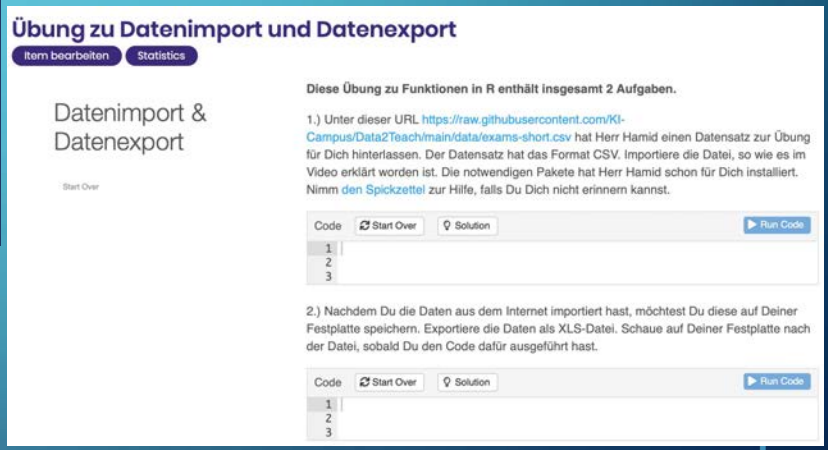
	# items	label	α
Factor 1	5	Accountability	.80
Factor 2	5	Communicativeness	.70
Factor 3	3	Utility	.70
Factor 4	4	Self-Efficacy	.72
Factor 5	5	Receptivity	.64

Kasch, Van Rosmalen, Henderikx, & Kalz (2022)

DATA SCIENCE IN DER BILDUNG

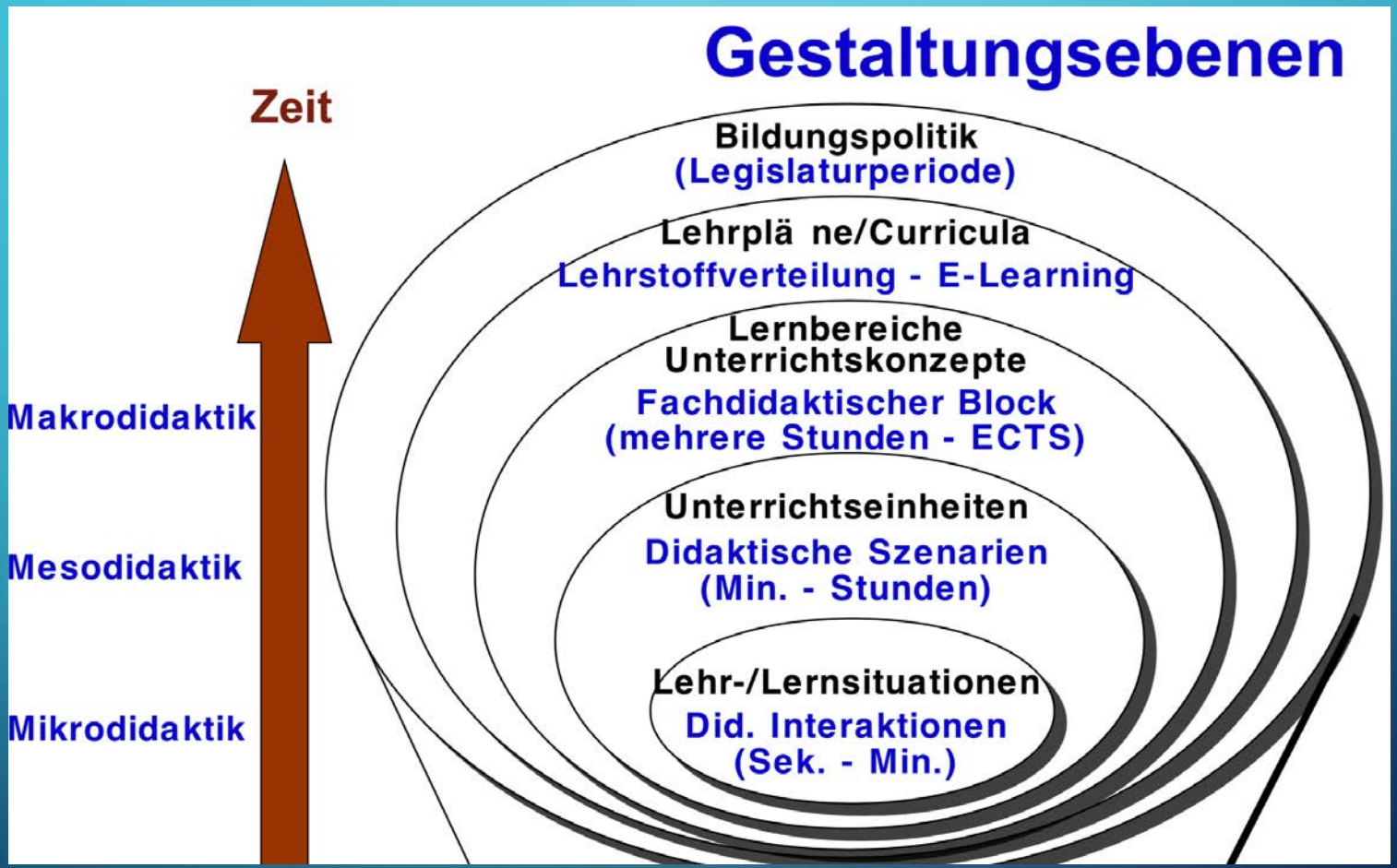
KI-Campus
BETA





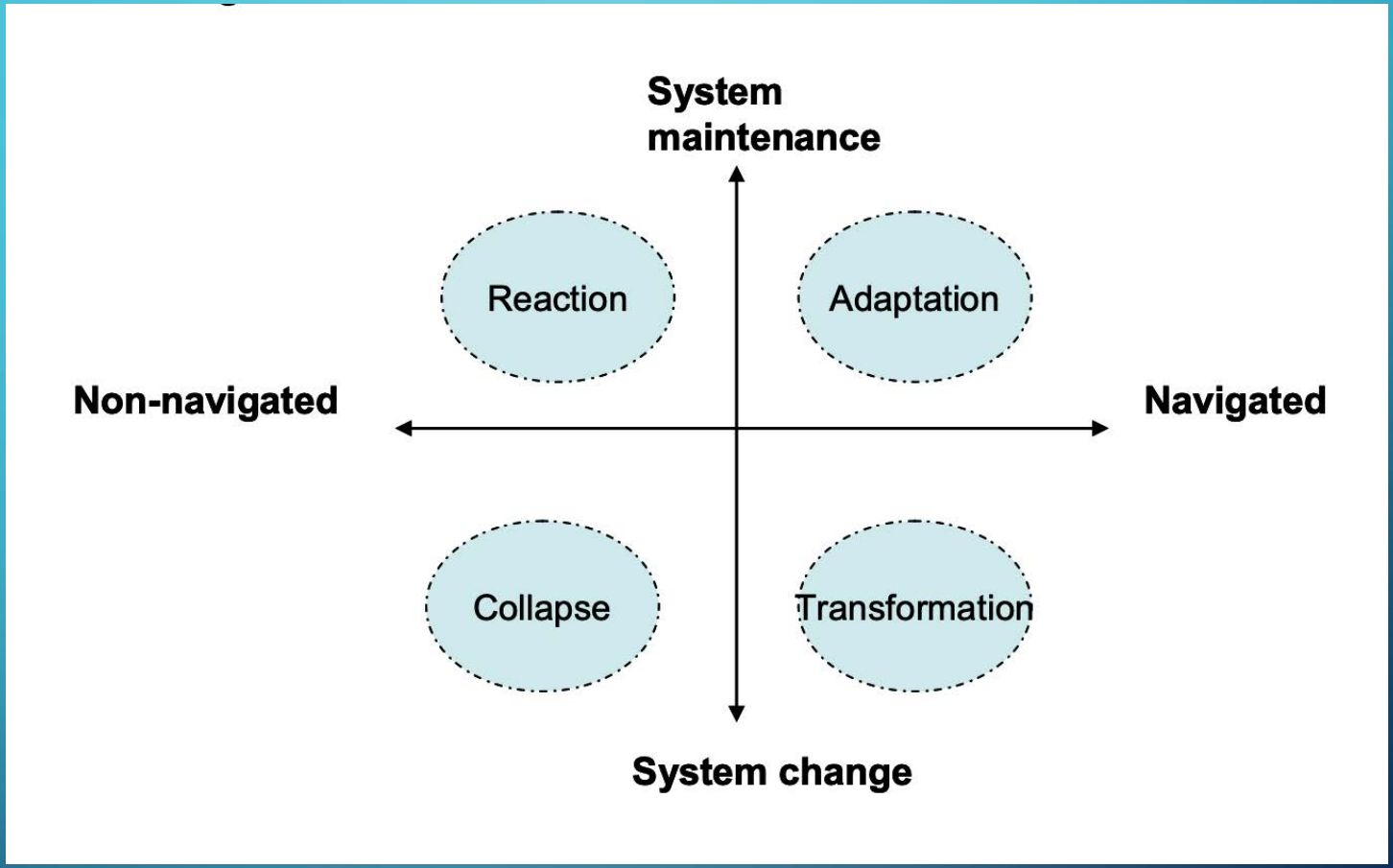
https://www.ki-campus.org/courses/data2teach

DIDAKTISCHER ENTSCHEIDUNGSRAUM



Baumgartner, 2016

PERTURBATION



Löf, 2017

NOTFALLDIGITALUNTERRICHT

The Difference Between Emergency Remote Teaching and Online Learning

Charles Hodges, Stephanie Moore, Barb Lockee, Torrey Trust and Aaron Bond Friday, March 27, 2020

16 min read

Well-planned online learning experiences are meaningfully different from courses offered online in response to a crisis or disaster. Colleges and universities working to maintain instruction during the COVID-19 pandemic should understand those differences when evaluating this emergency remote teaching.

DIGITALISIERUNG DER GESELLSCHAFT

The term ‘digitised society’ refers to a society that is dependent on digital technologies, software, platforms, media and social and digital networks for interaction, connectedness, both at work and in people’s everyday lives. This implies a society characterised by an ongoing and increased digitisation and more advanced technologies.

Fransson, 2016

DICHOTOMIEN

DICHOTOMIEN

POSTDIGITALE BILDUNG

„the digital is not a special or separate domain from embodied, co-present spaces that we inhabit day to day – instead, the two kinds of spaces are inextricably linked with each other“ (Bayne & Jandric, 2017)

Emerging postdigital perspectives reject the notion that education can ever be entirely online or digital; instead, it always involves the combination of digital, biological, material and social.

Fawns, 2018

HERAUSFORDERUNG 1: VERMEIDUNG VON MEDIENVERGLEICHSSTUDIEN

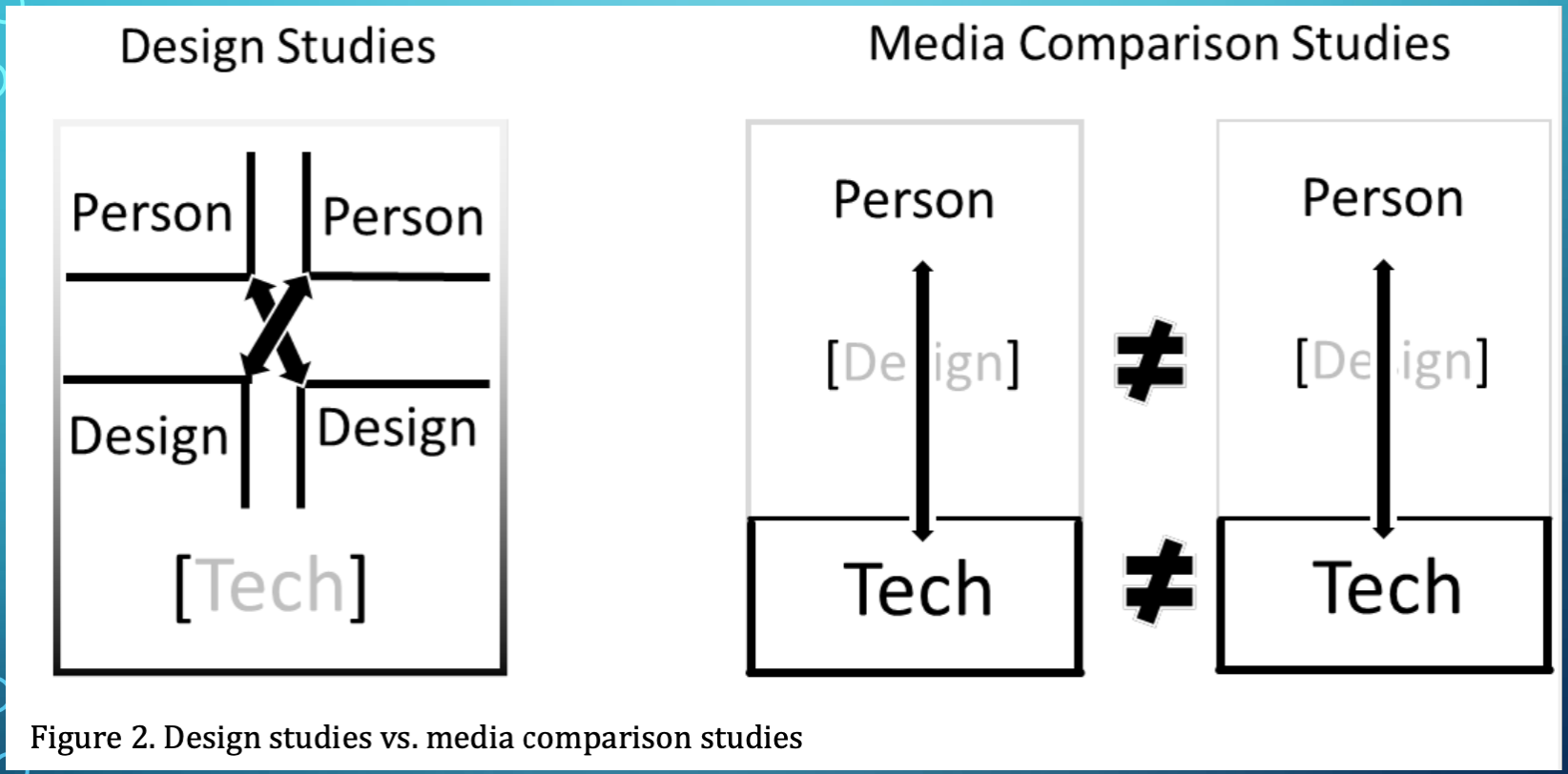


Figure 2. Design studies vs. media comparison studies

Kalz & Kerres (submitted)

HERAUSFORDERUNG 2: PILOTSTUDIEN MIT BREITENWIRKUNG UND IMPLEMENTATIONSFORSCHUNG: PEER-FEEDBACK IN SCHULE UND HOCHSCHULE

- Validierung der Peer-Feedback-Orientation Scale (PFOS)
- Effekte von Training auf Akzeptanz und Qualität von Peer-Feedback
- Effekte von Selbstbeurteilung auf die Objektivität von Peer-Feedback
- Buchprojekt „Peer-Feedback in der Hochschullehre: Grundlagen, Konzepte und Implementationsbeispiele“

HERAUSFORDERUNG 3: PARTIZIPATIVE MEDIENENTWICKLUNG UND

From such a position, the enactment of digital technologies in education has **ontological and epistemological implications** for the educational system that schools, teachers and pupils need to relate to.

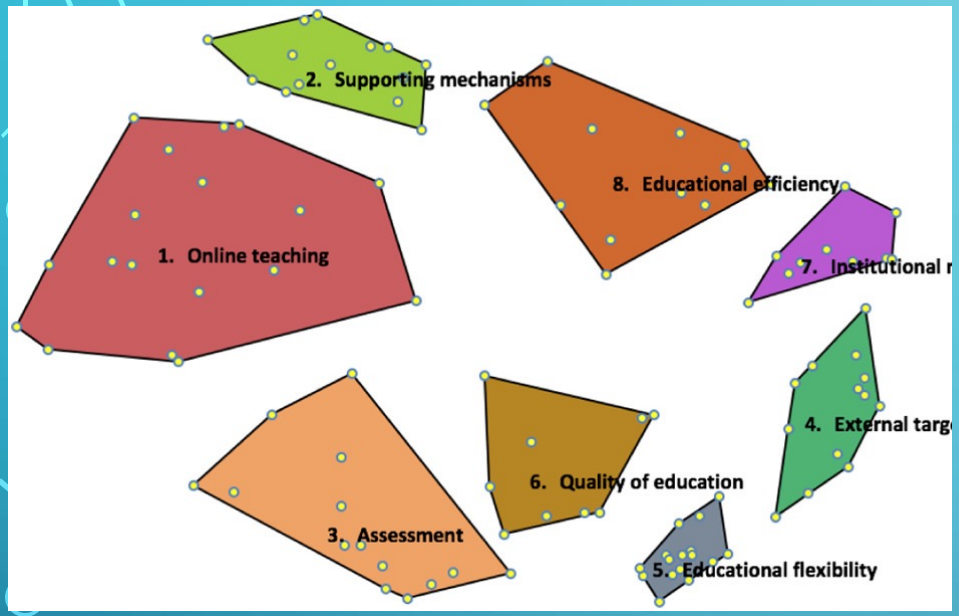
Fransson, 2016

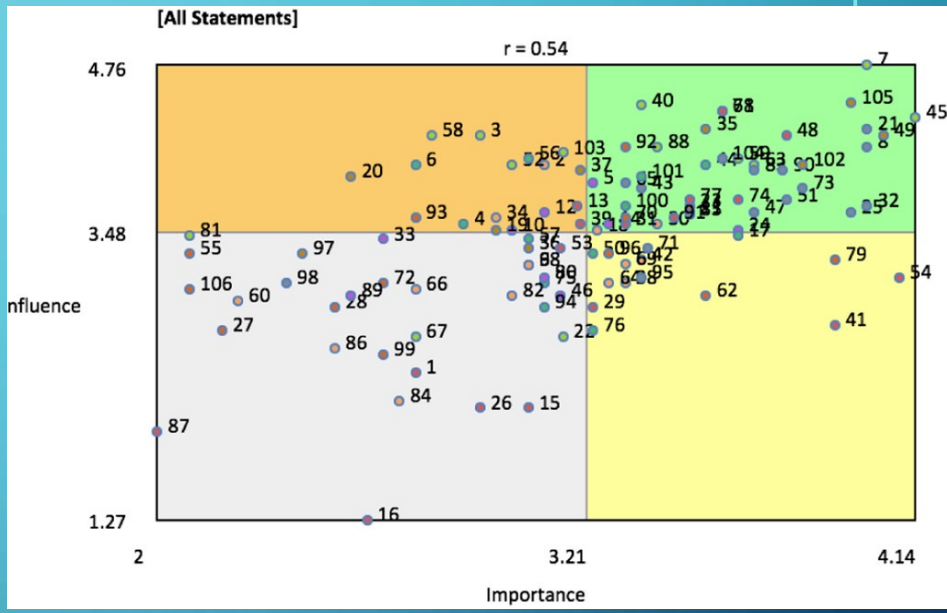
UNINTENDIERTE EFFEKTE

Qualitative Studie von Holmberg, Fransson & Fors (2018) zeigt gut die Dilemmata, in denen sich verschieden Typen von Lehrpersonen beim Thema der Digitalisierung befinden

- Vorteilhafter Einsatz von digitalen Medien hängt ab von der **Persönlichkeit** und **Kompetenzen** der Lehrperson
- Digitalisierungsdebatte kann das **Selbstbild von Lehrern negativ** beeinflussen

DIGITAL MEDIEN- UND ORGANISATIONSENTENTWICKLUNG





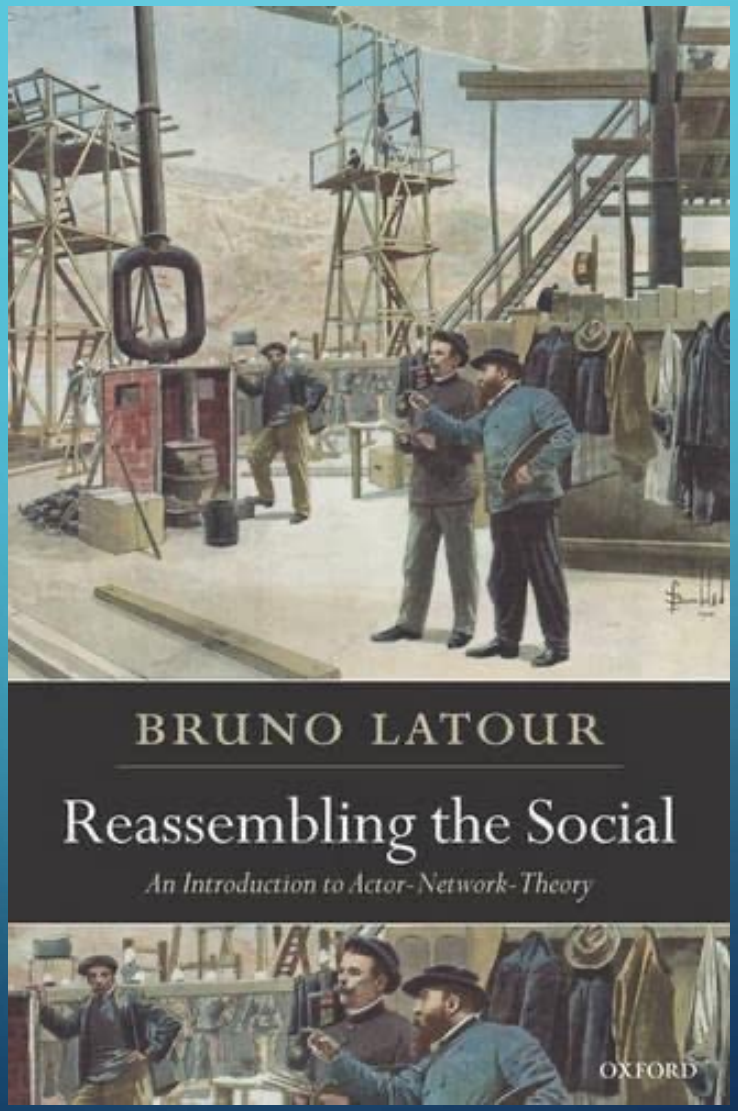
Schophuizen, M., Kreijns, K., Stoyanov, S., & Kalz, M. (2018). Eliciting the challenges and opportunities organizations face when delivering open online education: A group-concept mapping study. *The Internet and Higher Education*, *36*, 1-12.

ORGANIZATIONAL DEVELOPMENT

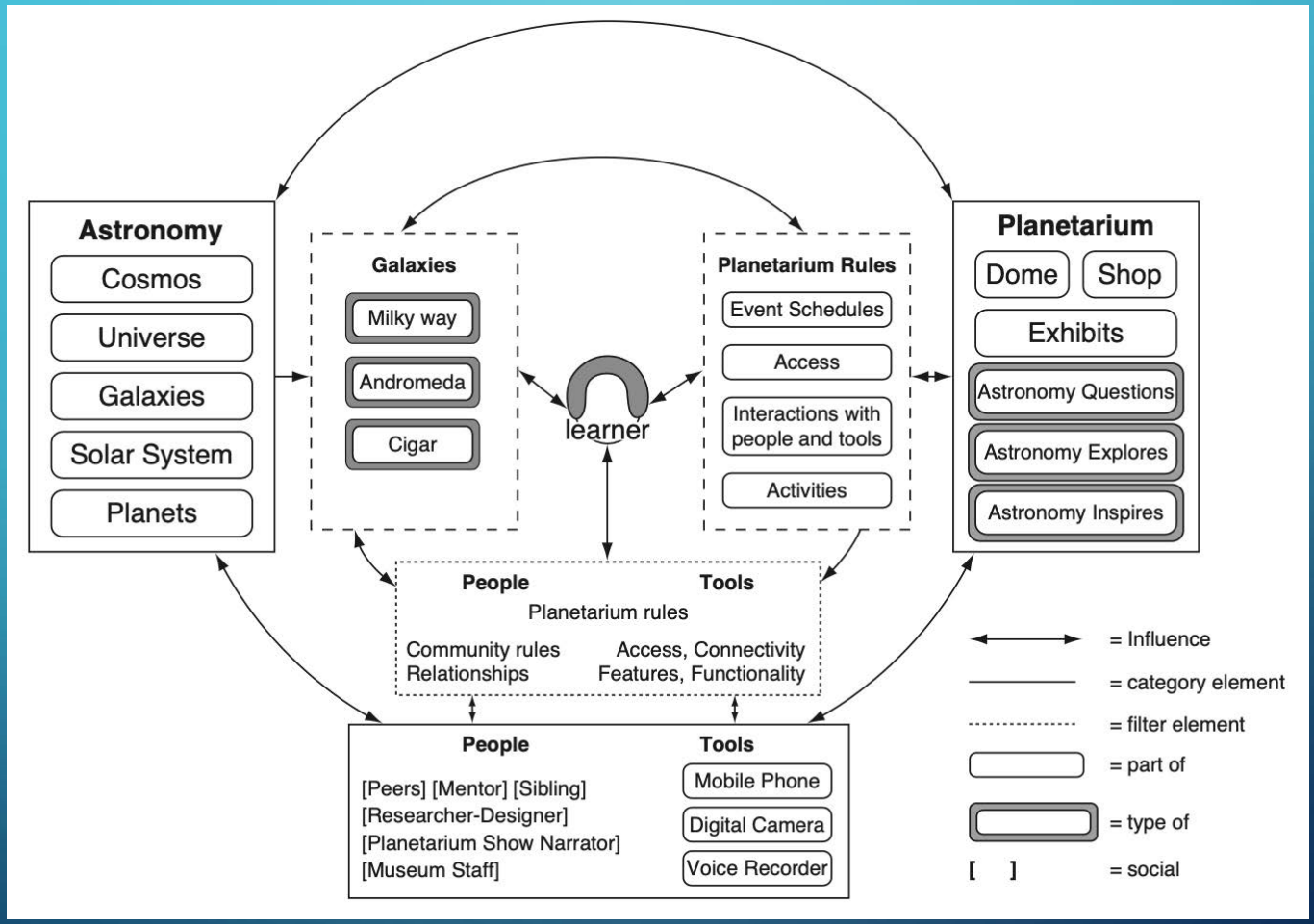
	Coping codes		
	C10 Primary appraisal	**C11 Secondary appraisal**	**C12 Coping efforts**
Thematic Codes (online teaching)			
C1 Skills gap for developing OOE	**Form and status of materials regarded differently:** - Knowledge about possibilities and appropriate forms missing - Development of materials seems more definitive and less easy to adjust - Use and reuse of materials ambiguous and complex **Teacher practices more distributed:** - Involvement of external and multiple stakeholders - Communication with all stakeholders	**Consideration of form, media and learning objectives** - Consider use and reuse possibilities - Adjust the form of the materials specifically to learning objectives and requirements **Involvement of more stakeholders in the development process:** - Incoporate teachers and their preferences - Make use of expertise of external bureaus and media parties - Involvement of library in data management **Sharing of knowledge:** - Platform/central portal or meeting opportunities to gain ideas and knowledge	**Planning** - Consider major time investment beforehand - Consider multiple stakeholders - Don't underestimate coordination of tasks and responsibilities **Seeking support:** - Coaching by external expertise - Supporting tools (e.g. autocue) - Make use of informal networks to find expertise **Create possibilities to experiment:** - Make use of local/bottum up resources (e.g. budget form local bodies for for example equipment) - Set up local workshops
C2 Skills gap for teaching in OOE	n/a	n/a	n/a
C3 Lack of awareness of goal and merits of OOE	**The commons idea behind OOE is missing:** - Individualistic attitude - Forced extrinsic motivation → no intrinsic value creation → ambiguous knowledge of OOE **Not being able to see multiple applications of OOE materials** **Management does not pick up on bottom up initiatives**	**Sharing of knowledge:** - Platform/central portal with a collection of ideas and good practices to get inspired **Incentivise OOE development and teaching innovations** **Adapted and personalised training possibilities**	**Sharing knowledge:** - Share examples with direct colleagues - Emphazise the gains for others in their contexts - Project as organizational signal

Schophuizen, M., & Kalz, M. (2020). Educational innovation projects in Dutch higher education: bottom-up contextual coping to deal with organizational challenges. *International Journal of Educational Technology in Higher Education*, *17*(1), 1-17.

HERAUSFORDERUNG 4: ENTWURF EINER NICHT-DETERMINISTISCHEN POSTDIGITALEN DIDAKTIK



HERAUSFORDERUNG 4: ENTWURF EINER NICHT-DETERMINISTISCHEN POSTDIGITALEN DIDAKTIK



Ecology-of-Resources Model
(Luckin, Clark, & Underwood, 2013)

HERAUSFORDERUNG 4: ENTWURF EINER NICHT-DETERMINISTISCHEN POSTDIGITALEN DIDAKTIK

#	Handlungs-ebene der Didaktik	Didaktische					
		Beschrei-bungen	Methoden		Prinzipien	Dimen-sionen	Kate-gorien
			Muster	Modelle			
		1	2a	2b	3	4	5
E	Curriculum Programm						
D	Curric. Block Modul		DIDAKTISCHES DESIGN				
C	Inhaltl. Block Ensemble						
B	Lehr-/Lern-Situation Szenario						
A	Interaktion Handlung						

Taxonomie von Unterrichtsmethoden
(Baumgartner, 2014)

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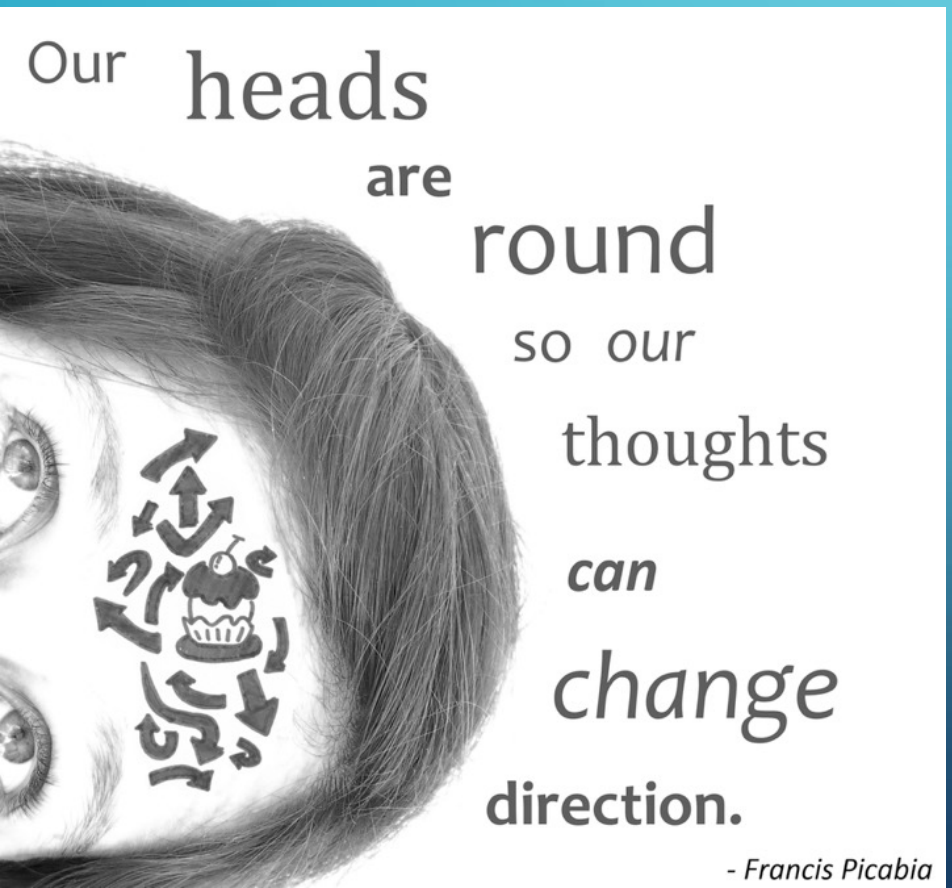

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