

Design of Self-Study Material on Digital Assessment for Faculty Training in Higher Education

Check out our self-study material!



<https://tinyurl.com/selfstudymaterial>



Research Focus and Context

The research project focuses on designing digital self-study resources for higher education faculty (with non-pedagogical expertise) to support effective digital assessment practices aligned with course objectives and teaching strategies. Amid the post-COVID-19 shift to online exams, faculty face challenges balancing legal, administrative and technical aspects with pedagogical principles.



Identified Challenges

A needs assessment at our institution highlighted a notable gap in faculty readiness for designing digital exams, revealing a focus on technical over didactical concerns. This gap underscored the need for targeted development resources to support instructors in implementing pedagogically sound assessments.



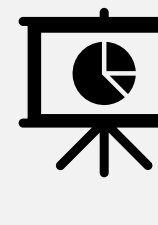
Methodological Approach

To address this and to foster effective assessment, we adopted a design-based research approach (Euler 2014), executing two cycles of iterative development and testing. Initial insights from literature and a workshop with faculty members guided the creation of a prototype, which was later refined through pilot testing using think-aloud protocols.



Findings

Feedback showed an appreciation for the modular structure and practical relevance of the material, though users pointed out issues with content density and some complex interactive features. Recommendations for improvement included simplifying content and integrating more relatable examples and more clear guidelines.

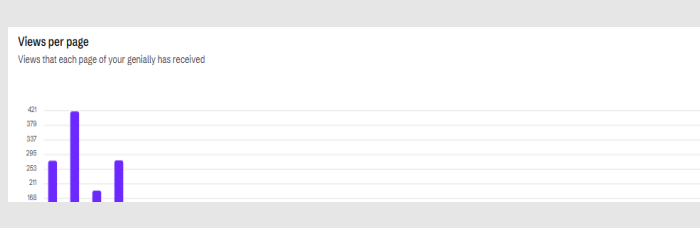


Contribution and Implications

This study adds to the limited body of research on self-directed faculty development materials, promoting flexible, autonomous on demand learning. By equipping faculty with resources to align digital assessments with instructional goals, this initiative ultimately aims to enhance assessment and teaching quality.

Method: Literature Review

Research underscores the importance of aligning the digital design of exams with course goals and effective pedagogy to promote meaningful and deep learning (Biggs, 2014; Metzger & Nüesch, 2004, p. 4). However, merely transferring traditional exam methods into a digital format without careful consideration risks undermining these benefits (Deimann et al., 2020; Horn & Schmees, 2020; Humboldt-Universität zu Berlin, 2021; Tovar et al., 2020).



Ongoing monitoring and user-feedback

To be done: Analysis of assessment design from faculty prior and post use of self-study material

Design Principles:

- strict **modularization** aligned with legal and technical framework
- Orientation on the **faculty work processes**
- Emphasis on **question / task design** as main design objects in assessment design.
- Show application of didactical potentials in **authentic examples** (from paper-pencil to digital mode).

Test of Prototype II

Method: Think Aloud Protocol

In a second round of testing, seven faculty members participated in think-aloud sessions. Qualitative content analysis (Mayring, 2000) of these sessions offered valuable insights into the material's effectiveness and areas for improvement.

Test of Prototype I

Method: Think Aloud Protocol

A pilot test with a higher education research expert, who used think-aloud protocols to assess the content, provided preliminary insights.

Development of Prototype II

Integration of pilot test Feedback from Think Aloud Protocols by higher education research expert.

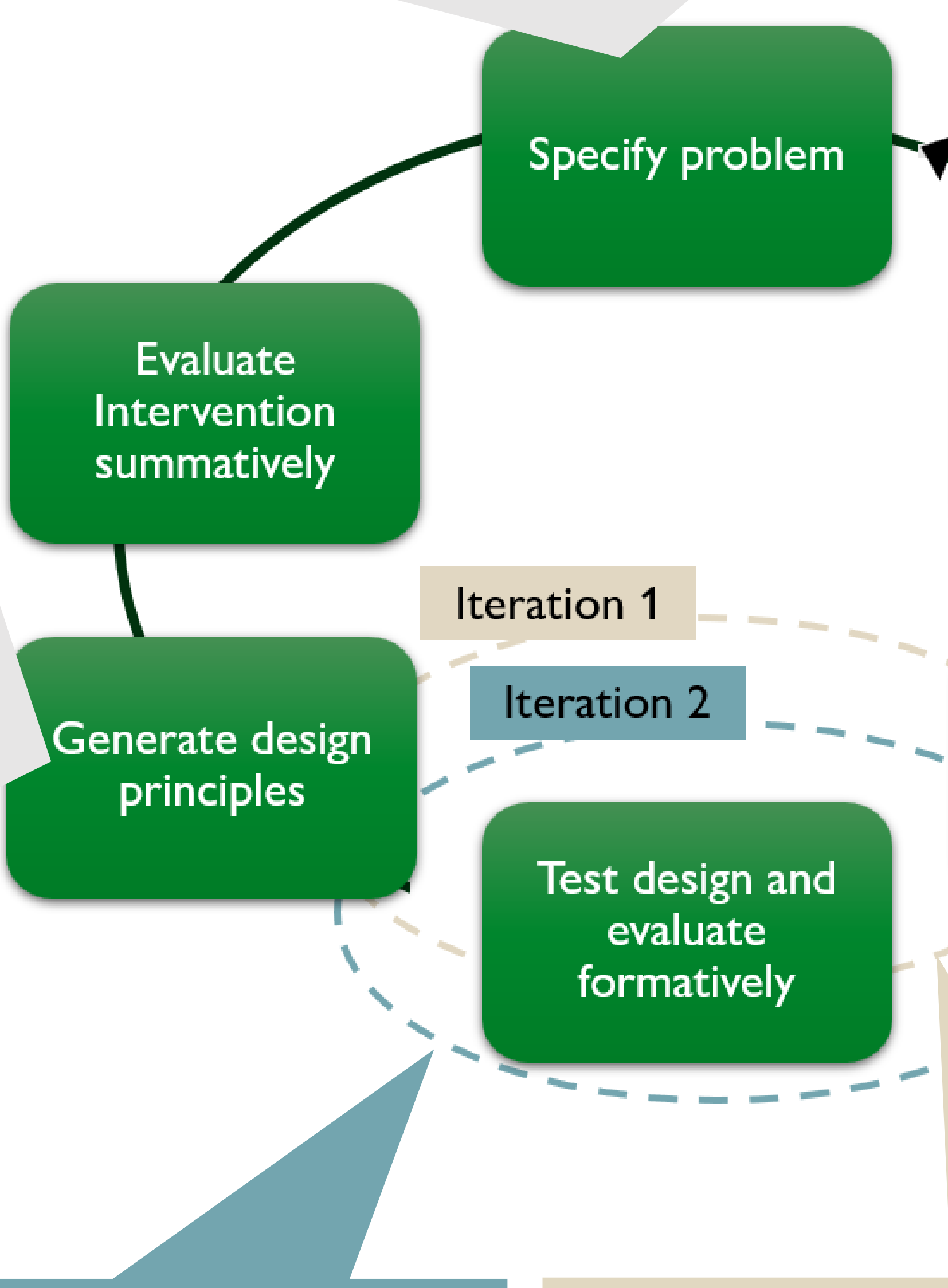
Methods: Literature Review & Workshop with lecturers

At our university, a faculty workshop revealed that many instructors lack training in didactically sound digital exam design, with technical and administrative concerns often taking precedence (HDZ, 2022).

Development of Prototype I

Method: Literature Review & Workshop with lecturers

The initial needs assessment involved a workshop with 13 faculty members, where key design priorities and requirements were identified. This guided the creation of an initial prototype: a web-based, interactive, self-learning module.



Selected Results from Prototype Testing and Corresponding Adaptations

Discussion & Conclusions

Content

Faculty valued particularly the examples of digitally enhanced assessment formats, which illustrated the didactic potential of digital assessments. This structure allowed comparisons between traditional paper-and-pen exam questions and their digitally enhanced versions.

Participants recommended including even more practical examples, especially sample rubrics, to improve applicability not only in the question/task designs but also in support for grading. We therefore added a section with examples of assessment rubrics for all the presented assessment types.

Didactic Design

Faculty appreciated the flexibility, modularity, and practical orientation of the materials, which allowed them to focus on the individual most relevant content in their context. The use of real examples and the direct comparison between the examples (paper-pen version vs. digital enhanced versions) was perceived as strongly persuasive, more examples were collected and modelled. Recommendation included clearer explanations of assessment types and the replacement of lengthy text with bullet points. These suggestions have been adopted.

Media Design

Regarding media design, some participants suggested simplifying the overview graphics for clarity. We therefore simplified some overview graphics, such as the graphic about oral assessments (see screenshot on the right).

Technical functionality

Technically, the material was accessible overall, though some interactive elements, such as quizzes, posed usability challenges. We therefore switched to the provider “Genially” instead of “Lumi” which allowed for better accessibility.

Task with direct transfer from paper & pencil to digital format

1 point
Reactive positioning is based on latent customer needs that arise randomly and responds to them with a bundle of marketing measures.
☐ True
☐ False
Task based on BWL A HS 22 exam task 1.3.2

Task utilizing the potential of digital assessments

1 point
Watch the video above. Imagine the video was published one year after the outbreak of the COVID-19 pandemic in Switzerland and Germany. Is the following statement true: The marketing in the video represents a reactive positioning.
☐ True
☐ False

Examples of assessment rubrics for written, oral, and practical assessments

Here you will find examples of assessment rubrics for different types of exams. They are intended to serve as inspiration and support.

Written assessments

- E-Portfolio
- Essay (short answer)
- Take Home Exam
- Document upload
- Active participation

Oral assessments

- Examination interview
- Expert discussions
- Role play
- Presentation
- Disputation / defense

Practical assessments

- Development of artifacts / work samples
- Authentic actions in a professional context
- Competence-oriented tests
- Simulations
- Real-life projects or challenges

Design of digital oral assessments

CHARACTERISTICS

- Examination interview (question-answer sequence)
- Expert discussions
- Role play
- Disputation or defense
- Presentation

KEY PHASES IN THE ASSESSMENT PROCESS

- Preparation
- Implementation
- Follow-up

POTENTIALS

- Digitale Applikationen
- Multimediale Formate
- Interaktivität
- Adaptivität
- Authentizität
- Effizienz
- Barrierefreiheit

Didactical information (e.g. teaching materials, guidelines) for faculty in Higher Education is often seen as not useful and applicable by faculty (especially by pedagogical non-experts).

Modelling the “transformation of assessment” within task design

within assessment design through curation and co-creation (faculty and higher education experts together) of real examples has been proven to have a more persuasive power.

Embeddedness in the faculty work processes

Faculty information needs are very close to their own work processes. There is more research needed for assessment design practices of faculty (often without pedagogical basic qualification). Applicability can be enhanced if the material offers support in modelling the transformation very close to the work process.

Embeddedness in the faculty context

Information are appreciated and appraised as useful, if there is a close fit to the legal, administrative and technical context. Ongoing adaptation with the frameworks and requirement changes is necessary although the design objects (question / task design) can be qualified as cross contextual valid. Sensitising faculty for the didactical sphere and the design scope within task design is necessary beside the legal, administrative and technical regulations and options.

There is a need to bring Support in Teaching and Learning in Higher Education even more close to the teaching processes of faculty: **From curated collection of teaching materials & guidelines to enhanced academic teaching practices.** This needs further effort in analysing faculties work processes, co-constructing new practices, decontextualizing real examples and opportunities for re-contextualizing as a way to **professionalize Teaching and Learning support in Higher Education**



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