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Assessing the assessment

A deep dive into assessment phases and the use of AI support

In education, assessment is a continuous process encompassing a range of work phases, including planning, design, implementation, and evaluation. These phases are fundamental to the creation of effective learning environments, regardless of the assessment format. As part of the LeLa ('Learning Lab Higher Education Didactics for Digital Skills') project, educational developers from five universities in the Canton of Zurich – the University of Zurich (UZH), the Swiss Federal Institute of Technology (ETH), the Zurich University of Teacher Education (PHZH), the Zurich University of the Arts (ZHdK) and the Zurich University of Applied Sciences (ZHAW) – collaborated to outline the constituent phases of an assessment cycle and to explore how generative artificial intelligence (AI) might be integrated into this process. Specifically, the potential of AI to enhance the efficiency of the assessment process, to stimulate creativity, and to provide targeted support for assessment

improvement was investigated. The main outcome of this collaboration is a graphical representation of an assessment cycle which includes key tasks for each work phase, practical tips, and resources provided by the participating universities. It also offers guidance on the use of AI and includes example prompts for each work phase.

Assessment in higher education

In the context of higher education, assessment constitutes a fundamental element of the teaching and learning process, serving multiple functions. These include evaluating learner achievement, informing instructional strategies, and ensuring the alignment of educational outcomes with pre-defined learning objectives. At its core, assessment is not merely a grading instrument, but a tool for enhancing the overall educational experience. Aligned with the constructivist approach to learning,[1] assessments must be explicitly linked to the intended learning outcomes and the corresponding teaching activities. This alignment ensures that students are assessed on what they are expected to learn, creating a coherent educational experience that promotes deep, meaningful learning.

The function of an assessment may vary, with different areas of focus depending on the intended purpose. Assessments may serve as either legally binding qualifications (summative assessments) or aim to support learners in their development by providing feedback on progress (formative assessment). Summative assessments are typically employed in high-stakes contexts within university courses, for purposes including the recruitment of learners, the provision of reliable indicators of academic potential, or the legitimisation of a professional qualification. Owing to the considerable legal implications associated with these selection purposes, it is imperative that summative assessments are rigorously designed in accordance with established quality criteria to ensure a valid, reliable, objective and fair evaluation of learner performance. This often requires structuring the assessment process into clearly defined phases and implementing meticulous grading practices. While summative

1 Biggs, 1996.

assessments are frequently conducted as a single event at the end of a semester, they may also comprise multiple components distributed across the term.[2]

In contrast, formative assessments serve an educational function, prioritising learning over selection. Their primary objectives are to clarify learning goals and success criteria, facilitate self-evaluation of learners' achievements and motivation, and provide guidance for ongoing improvement. Emphasis on learner self-regulation is especially advantageous for learning, making formative assessment a vital component of the teaching process. By fostering active engagement and personal responsibility, formative assessments support deeper understanding and long-term retention.[3] Formative feedback plays a central role in formative assessment, as it offers learners timely, detailed insights into their progress, thereby helping them to recognise both strengths and areas requiring development. As Carless & Boud[4] explain, constructive formative feedback is a process that involves developing an understanding of learners' grasp of subject matter, their abilities and dispositions, in order to enable them to make sense of information and use it to enhance their work or learning strategies. This type of feedback provides learners with information about their current level of performance relative to the expected standard, along with actionable guidance for closing the gap.[5]

As outlined above, for an assessment to be considered effective, it must adhere to a number of key quality criteria, the most important of which are validity, reliability and fairness. Validity concerns the extent to which an assessment instrument accurately gauges the construct it is designed to assess, ensuring that the results faithfully reflect learners' knowledge and skills in alignment with the specified learning outcomes.[6] Reliability refers to the consistency of assessment outcomes across different instances or assessors, which is particularly critical in summative assessments involving high-stakes decisions.[7] Fairness in assessment relates to the equitable treatment of all learners,

2 Taras, 2005.
3 Ibid.
4 Carless & Boud, 2018.
5 Ramaprasad, 1983. For practical advice on how to formulate and integrate formative feedback effectively within a course, see Klein et al., 2024.
6 Messick, 1989.
7 Stobart, 2005.

ensuring that each has an equal opportunity to demonstrate their knowledge and skills without any form of bias.[8]

The aforementioned quality criteria are applied in different ways in formative and summative assessments, reflecting the distinct purposes of each. In formative assessment, the objective is to facilitate the development of competencies, which can be defined as the abilities and skills that learners are expected to acquire over time. In this context, the feedback should provide an accurate reflection of the learner's current level of understanding in order to effectively guide further learning. While reliability remains an important consideration, it is often regarded as secondary to the usefulness of the feedback in promoting the learner's growth.

In contrast, summative assessment places greater emphasis on the measurement of qualifications. Consequently, reliability becomes a critical factor in ensuring that the results are consistent and can be trusted when making significant decisions regarding learners' academic progress. Although validity remains an essential consideration, it must be balanced with the need for standardisation and comparability across diverse learner groups and contexts.

The assessment cycle and the ways AI can reshape its dynamics

In conducting an assessment, university teachers typically progress through a series of key phases, each of which is critical to the overall effectiveness of the process. These phases – defining learning objectives, planning, designing, implementing, and evaluating assessments – form a structured sequence that ensures alignment with educational goals and upholds fairness and efficacy, regardless of the assessment format. This sequence can be conceptualised as a cyclical process, particularly when the assessment is repeated in subsequent semesters. Framing assessment as a cycle allows educators to systematically revisit and refine each phase, applying insights and lessons from previous iterations to enhance the quality of future assessments.[9] Such an approach

8 Sadler, 2005.
9 Brookhart, 2004.

ensures that assessments remain pedagogically sound, fair, and effective in capturing student learning.[10]

For example, Taras[11] discusses the importance of integrating formative feedback within the assessment cycle. The author argues that it acts as a bridge between the learning process and summative assessment, informing both learners and educators about the learning process. Similarly, Boud & Falchikov[12] propose an assessment cycle that incorporates reflective practice, facilitating the iterative improvement of assessment strategies based on learner performance and feedback. Furthermore, the cyclical nature of assessment underscores the significance of the evaluation phase, in which the efficacy of the assessment is critically reviewed and insights are used to refine future assessments.[13] This continuous loop ensures that assessment practices remain responsive to both educational advancements and the changing needs of learners.

Today, generative artificial intelligence (AI) is shaping teaching, learning and assessment practices across educational contexts.[14] Within the assessment cycle, AI holds the potential to enhance each phase of the process in innovative ways. From the initial formulation of learning objectives to the final evaluation stage, AI can support educators in designing assessments that are more effective, equitable, and efficient. For example, the integration of AI offers opportunities for the generation of ideas and the optimisation of processes at all stages of the assessment cycle. In addition, AI can be employed for the quality assurance of assessment products, including the verification and completion of comprehensive checklists, examination questions, and rubrics – thereby ensuring alignment with established standards of quality, rigour, and completeness.

To illustrate, in the planning phase, AI can assist in aligning assessments with learning objectives to ensure their relevance and comprehensiveness. AI tools such as ChatGPT[15] and other large language models can support teachers in generating precise and well-structured learning objectives that are free

10 Knight & Allen, 2012.
11 Taras, 2005.
12 Boud & Falchikov, 2007.
13 Brookhart, 2004.
14 Luckin et al., 2016.
15 https://chatgpt.com.

from language errors and inconsistencies, thereby facilitating assessments that are focussed, measurable, and relevant to the intended skills.

Moreover, AI has the potential to personalise learning processes, automate administrative tasks and provide data-driven insights, thereby supporting educators in creating more dynamic, responsive, and equitable educational environments. However, it is essential that critical considerations – particularly those concerning equity, privacy, and the evolving role of the human teacher – remain central to any discussion and implementation of AI in education.[16]

Thus, our work seeks to raise awareness among university teachers regarding quality considerations in the development and implementation of performance assessments, with AI positioned as a supportive tool. To this end, we examine the phases of an assessment cycle, jointly outlining its key phases and investigating how generative AI can be integrated into each phase to enhance the overall process. Within this framework, we explore how AI can streamline the assessment process, serve as a source of inspiration, and provide specific support through targeted prompts designed to improve the quality and effectiveness of assessments. To facilitate practical application and encourage experimentation, we provide adaptable sample prompts that teachers can tailor to meet their specific needs.

Procedure

Before implementing the assessment cycle, we began by collating all pertinent documentation on assessment from the participating universities. These documents included guidelines and resources such as instructions for designing multiple-choice questions, various typologies of assessment formats for both summative and formative purposes, advice on formulating learning outcomes, and recommendations for evaluating courses and assessments.

A further step involved examining the phases of the assessment cycle with a view to integrating important didactic considerations into the process. In this context, the specific requirements and strengths of the individual universities were taken into account to design an assessment cycle that is appropriate for their diverse subject orientations, which vary markedly across the

16 Williamson & Eynon, 2020.

participating institutions: ETH Zurich offers a broad spectrum of subjects ranging from architecture and medicine to management, environmental systems science, and the humanities, social and political sciences. Nevertheless, its primary focus lies in the natural and engineering sciences and mathematics, with a strong emphasis on technology and innovation. As a comprehensive institution, the University of Zurich (UZH) offers a wide range of disciplines. The largest number of students are enrolled in the faculties of the humanities and social sciences, natural sciences, economics, law, medicine and veterinary medicine. Its academic scope also encompasses religious studies and theology. By contrast, the Zurich University of the Arts (ZHdK) is dedicated to art education, cultural critique, design, film, fine arts, music, dance, theatre, and transdisciplinary studies, with a strong commitment to fostering creative innovation through interdisciplinary exchange and experimental practices. The Zurich University of Applied Sciences (ZHAW) offers practice-oriented degree programmes in technology, health, social sciences, business, and environmental sciences. Meanwhile, the Zurich University of Teacher Education (PHZH) specialises in teacher training and the development of innovative pedagogical approaches for the education sector.

The diverse specialisations of the participating universities make our assessment cycle broadly applicable across a wide range of subject areas and institutions, thereby enhancing the overall quality of assessment formats.

This collaborative cooperation resulted in the development of an assessment cycle comprising the following phases:

- Course with learning objectives
- Planning of the assessment
- Creation of the assessment
- Implementation of the assessment
- Formative guidance by the learner/teacher
- Assessment and grading
- Analysis of task quality (optional, depending on the assessment format)
- Evaluation of the course/assessment

Figure 1 illustrates the assessment cycle, outlining its individual work phases in a predefined, didactically meaningful sequence. The white boxes refer to the individual work phases constituting the assessment cycle, while the white arrows on those boxes indicate a sequence that provides a didactically meaningful structure to the work process. The dotted lines suggest potential feed-

back loops, highlighting opportunities for iterative refinement when the assessment is repeated.

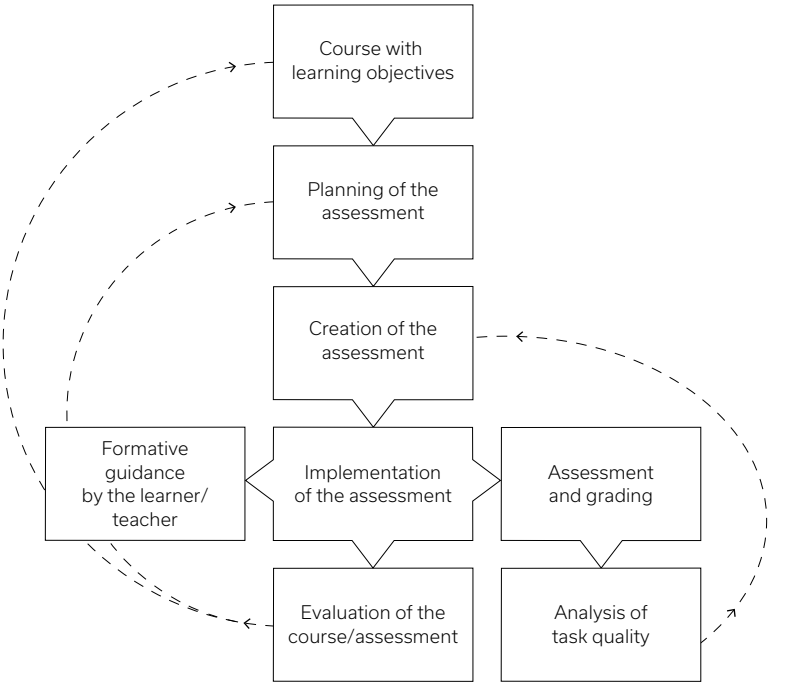

FIG. 1: The assessment cycle

Description of the work phases

Course with learning objectives. In the initial phase of the assessment cycle, the course is designed with clearly defined learning objectives. These objectives serve to structure the course content and guide learner behaviour; as a result, they are of central importance in the assessment process. The learning objectives should be expressed in a clear and intelligible manner and designed to facilitate the attainment of varying levels of competence.

Planning of the assessment. During the planning phase of an assessment, it must be determined how learners will demonstrate their knowledge and skills. This includes deciding whether an oral, written (online or on paper, closed or open book), or a practical task assessment format is most appropriate. Additionally, it is essential to determine whether the evaluation should be based on a single assessment event or comprise multiple components, such as a learning portfolio or a case study done in groups. In the latter case, an important further consideration is how individual performances should be weighted within the overall assessment.

Creation of the assessment. In the process of designing an assessment task, we consider the following aspects, which serve as quality criteria:

- The assessment must be carried out consistently for all learners to ensure objectivity. It should also cover the relevant learning objectives in a thorough and representative way, thereby ensuring validity.
- The assessment should enable a clear evaluation of how well learners have acquired the desired competencies.
- Learning objectives must serve as the evaluation standard for an assessment. By carefully formulating individual tasks – or including a sufficient number of tasks – it is possible to assess the intended competencies with a high degree of accuracy, thereby ensuring reliability.

In addition, it is advisable to seek feedback from subject matter experts regarding the content of the tasks.

Implementation of the assessment. The conditions governing the assessment of each learner must be applied consistently and objectively, regardless of the specific circumstances or performance in question. The nature of the performance to be assessed depends on the format of the assessment and, as such, informs the assessment process. It is appropriate to offer guidance to support learning, whether through formative feedback or other means, depending on the learning objectives and the chosen assessment format.

The assessment process is then carried out in two distinct phases: *Assessment and grading* and *Formative guidance by the learner/teacher.* If the assessment involves formative evaluation, formative guidance is provided by teachers and/or peers in the form of feedback.

Formative guidance by the learner/teacher. Providing learners with formative support throughout the learning process is essential in all cases. Individualised support helps identify misunderstandings and challenges, facilitates discussions on strategies for improving performance, and encourages critical thinking. Feedback can be offered at various levels, either by the teacher to the learner or among peers. While peer feedback can help reduce the teacher's workload, more importantly, it enhances the learner's understanding of exemplary performance, strengthens communication skills, and promotes mutual respect.

Assessment and grading. The provision of assessment criteria, sample answers, exemplars, or rubrics is beneficial to the assessment process, as it offers learners clear guidance on the required standards of quality and supports the teacher in grading. Grades are assigned based on a factual reference standard, evaluating performance against pre-defined criteria. This can result in impartial and unbiased assessment, thereby increasing transparency for learners.

Analysis of task quality. In the *Assessment and grading* phase, the difficulty and quality of tasks can be objectively determined through statistical key figure analysis (e.g., facility index, discrimination index, reliability). This is particularly relevant for closed-ended question types in the context of a post-review of a written examination. Such an analysis allows for the identification of deficiencies in the assessment design and provides opportunities to optimise questions for future assessments.

Evaluation of the course/assessment. The purpose of evaluations is twofold: firstly, to ensure the quality of the teaching provided; secondly, to support the development of teaching innovation. A distinction may be drawn between course evaluations and/or assessment evaluations. Course evaluation refers to the appraisal of the quality of a course or module according to specific dimensions, such as student learning outcomes or satisfaction with teaching performance. In addition to institutional evaluation schemes, a variety of independent evaluation methods may be employed – among them the widely used classroom assessment techniques.

Integrating AI in the assessment cycle

The second stage of our working process involved a collaborative effort to determine how teachers might improve the efficiency and quality of assessment across the various phases of the assessment cycle through the use of AI. In order to explore potential applications of AI in an objective manner – regardless of the assessment format – a series of prompts was developed for a variety of specific formats. In each case, an attempt was made to identify commonalities, employing a range of language models to do so.

To illustrate, with respect to the first phase of the cycle, *Course with learning objectives,* the following use cases for integrating AI have been proposed:

- Inspiration to formulate learning objectives
- Formulating concrete learning objectives based on existing teaching materials
- Formulating learning objectives at different levels of competence
- Suggestions for performance assessment in line with learning objectives

Accordingly, for each phase, comprehensive instructions, concrete application tips, and sample prompts are provided, all of which can be readily adapted to meet the specific needs and contexts of individual users.

In the process of designing the prompts, our approach was guided by the theoretical PREP & EDIT framework proposed by Fitzpatrick,[17] which is structured and based on clear criteria to ensure quality and fairness in prompt formulation. PREP stands for *Prompt, Role, Explicit,* and *Parameters* – a set of principles designed to guide the initial construction of prompts by clarifying the question, assigning a role, making instructions explicit, and setting boundaries for the expected response. EDIT refers to *Evaluate, Diagnose, Identify,* and *Transform* – encouraging iterative refinement of the output to better meet the intended goals while reducing bias and misinformation.

Figure 2 shows an exemplar prompt addressing the aspect *Inspiration to formulate learning objectives.* It serves as an example of how AI can be integrated into the work phase *Course with learning objectives.*

17 Fitzpatrick, 2023.

```
You are a very experienced teacher at a Swiss university, and you are asked
to teach a [INSERT TEACHING COURSE] for the [INSERT STUDY COURSE] programme
in the [INSERT SEMESTER] semester on [INSERT TEACHING COURSE TOPIC]. What
specific content do you propose to work on? Formulate five learning
objectives that learners should be able to achieve by the end of the
semester. The learning objectives should be relevant to the learners'
everyday working life.
```

FIG. 2: Example prompt based on the PREP & EDIT framework by Fitzpatrick (2023)

Products

The first product is a PDF featuring a graphical representation of the assessment cycle, similar to Figure 1. However, each work phase is described in greater detail, including:

- Key tasks
- Practical tips (e.g., provision of relevant information about the exam to learners or people assisting in the exam)
- Resources provided by participating universities (e.g., checklists from the individual universities)
- Tips for using AI
- Examples of prompts

The assessment cycle can be adapted by educational developers to suit the specific needs of their institution and made available to teaching staff. It is applicable across a range of assessment formats, including both formative and summative assessment. Instructions are provided to support the use of the assessment cycle, including guidance on prompt creation and the application of AI.

The second product developed is a custom generative pre-trained transformer (GPT) known as 'Assessment Support' within ChatGPT-4.[18] It can be accessed directly via the following link: https://chatgpt.com/g/g-eNeNAW2NL-assessment-support. The GPT functions as an advisory system for pedagogical and organisational matters relating to the assessment work phases. In this case, the custom GPT serves as an information-based tool, with additional

18 https://chatgpt.com/g/g-eNeNAW2NL-assessment-support.

capabilities for web browsing and referencing previously uploaded documents. The assessment cycle was uploaded into the model as a file reference.

When using the custom GPT, the model initially requests information about the university, the course title and description, the number of learners, and any specific requirements for the assessment. This allows it to provide advice that is tailored to the user's particular context. Following this, the custom GPT supplies the user with information concerning the constituent phases of the assessment cycle. At the outset, the model asks which phase the user would like support with. It then provides feedback, makes suggestions, and clarifies questions in response to user prompts. The interaction continues iteratively, addressing further queries and offering more detailed information as required.

All products are accessible as Open Educational Resource (OER) and can be downloaded from the University of Zurich's Teaching Tools website (https://teachingtools.uzh.ch/en/tools/die-fuenf-phasen-von-leistungsnachweisen).

Insights and outlook

This project was a collaborative effort among educational developers from five universities, aimed at devising a transferable assessment cycle that incorporates generative AI to enhance the efficiency, quality and adaptability of assessments. The collaboration led to the design of an assessment cycle that can be applied across a diverse range of academic disciplines. The versatility of this assessment cycle, being adaptable to various fields of study, contributes to the robustness of assessment quality, in line with established evaluation standards.[19]

A key advancement in our methodology is the integration of AI into the assessment cycle. A review of the literature indicates that the integration of AI with assessment cycles has not yet been sufficiently explored.[20] Our work addresses this gap by offering concrete proposals for embedding AI into each phase of the assessment cycle to enhance both efficiency and quality. Moreover, the application of AI can facilitate a more precise alignment between assess-

19 Messick, 1989; Stobart, 2005.
20 Williamson & Eynon, 2020.

ments and learning objectives, thereby increasing the validity of performance assessments.

Use of AI-supported tools, such as the 'Assessment Support' custom GPT, also has the potential to enhance the quality criteria within the assessment process. This is achieved by offering targeted suggestions and prompting critical reflection, while guiding teachers through each phase of the cycle. The practical application of the GPT demonstrates that AI can support both content creation and critical reflection on assessment practices, thereby contributing to the optimisation of key aspects such as task validity and fairness.[21]

Nevertheless, the integration of AI into the field of education presents a number of challenges. Ethical considerations – including data privacy, algorithmic bias, and the necessity for human oversight – remain critical issues.[22] Although AI offers considerable potential to enhance the quality and fairness of assessment, it is imperative that educators engage with such tools in a critical and ethical manner so as to guarantee their responsible and ethical deployment. Ensuring their appropriate use requires transparency in the generation of AI-driven recommendations, as well as ongoing vigilance with regard to potential biases that may impact learner outcomes.

Effective integration of AI into education requires comprehensive training for all users, ensuring both technical proficiency and a sound understanding of pedagogical principles.[23] Training should not only address the technical dimensions of AI but also highlight its pedagogical benefits and potential risks, enabling informed and responsible use in assessment practices. Moreover, maintaining a balance between automation and human judgement is crucial. While AI can enhance efficiency and fairness by automating routine tasks, the expertise and discernment of teachers remain indispensable in decision-making.[24] Continued practical experience and research are necessary to develop frameworks that clearly delineate the respective roles of AI and human educators.

In conclusion, as AI becomes increasingly integrated into educational practice, it is imperative to re-evaluate and adapt assessment methods to ensure they continue to accurately gauge the skills and competencies required in an

21 Boud & Falchikov, 2007.
22 Selwyn, 2019.
23 Fadel et al., 2019.
24 Luckin, 2018.

AI-driven world, while safeguarding principles of fairness, validity, and the role of human judgement.

The current version of the developed assessment cycle is included as an appendix to this text as a supplementary overview.

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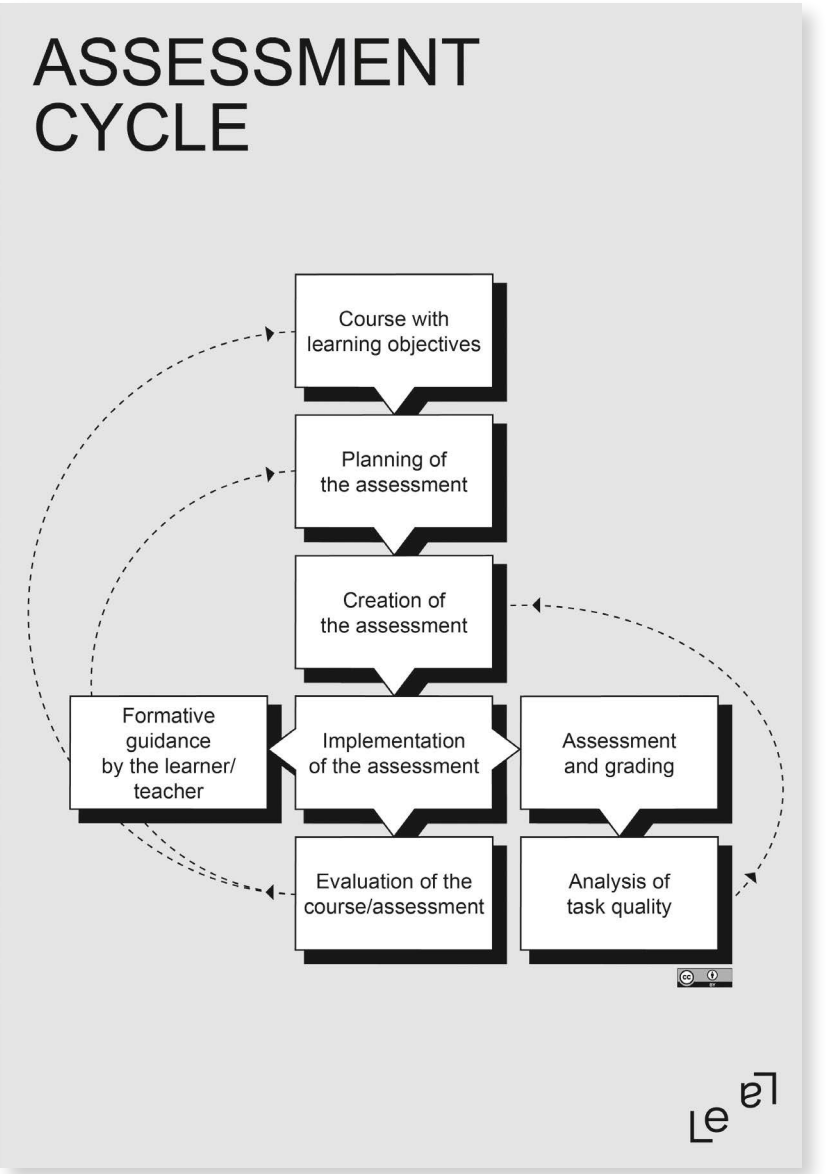
Figures

FIG. 1: The assessment cycle. © LeLa/AG Assessment, 2025.

FIG. 2: Example prompt based on the PREP & EDIT-framework by Fitzpatrick, 2023.



Introduction

This assessment cycle aims to combine didactic aspects of assessment with the use of generative artificial intelligence (AI). The steps in the cycle are divided into phases, although these are not always clearly distinguishable from one another.

The use of AI within the assessment cycle offers opportunities to optimise or inspire the individual phases. For example, it can support the planning and implementation of new assessments, as well as the validation of existing assessment formats and tasks.

Practical tips on using AI are provided below for each phase, along with specific prompts. These sample prompts can be adapted to suit your own needs, making it easier to get started with AI in assessment.

Using a framework for creating prompts, such as PREP or EDIT (https://technology.dcds.edu/index.php/the-art-of-prompt-engineering-for-optimal-performance), can help make your prompts more effective:

→ Use the PREP method when writing prompts:

+ ***Prompt:*** Write a short and concise prompt.
+ ***Role:*** Assign a specific role to the AI. Prompts often improve when the AI takes on the role of an expert.
+ ***Explicit:*** Clearly state what you want to achieve with your prompt. This includes setting clear goals and defining a framework to ensure the generated prompts are effective in the various phases of the evaluation cycle. For example, specify the resources to be used, such as websites, texts, uploaded PDF files, etc.
+ ***Parameters:*** Define the parameters of your desired answer (e.g. table format, maximum number of words).

→ Actively engaging with AI—and continuously questioning the process—is essential; the EDIT method can support this.

+ ***Evaluate:*** Evaluate the AI's output in response to your prompt.
+ ***Determine:*** Determine the accuracy of the output. The result must always be checked for accuracy and feasibility and adapted to individual needs. The author is responsible for the generated content.
+ ***Identify:*** Identify possible biases or incorrect information.
+ ***Transform:*** Adjust your prompt accordingly and repeat the PREP and EDIT steps until you are satisfied with the result. When working with AI, repeated checks and adjustments are important, as this iterative process can improve the quality of the output. This may take some time and practice at first—don't give up, you're learning!

→ Effective prompting requires an understanding of the capabilities of the AI technology being used, its context and potential biases, as well as the ability to refine prompts based on feedback. Available AI tools are designed and trained for specific tasks, such as text generation or image analysis. Understanding this helps set realistic expectations and tailor prompts more effectively.
→ Before using generative AI, be aware that each individual user is responsible for reviewing their institution's current terms of use and privacy policy. For information on the use of AI in education in the Canton of Zurich, please consult the relevant local guidelines: https://www.zh.ch/en/wirtschaft-arbeit/wirtschaftsstandort/innovation-sandbox/ki-in-der-bildung-rechtliche-best-practices.html).
→ Resources for further guidance in the educational context: https://www.aiforeducation.io/prompt-library

PHASES OF THE ASSESSMENT CYCLE

COURSE WITH LEARNING OBJECTIVES

Learning objectives structure the course, guide learners' learning behaviour and are therefore central to assessment. They are formulated in a clear and comprehensible manner and aim to achieve different levels of competence.

Practical tips:

→ Ensure the learning objectives of your course are formulated in a competence-oriented, observable and measurable way.

→ Communicate the learning objectives clearly to the learners.

Useful resources:

Bloom, B. S., Engelhart, M. D., Furst, E. J., Hill, W. H. & Krathwohl, D. R. (eds.) (1956). *Taxonomy of educational objectives. The classification of educational goals, Handbook I: Cognitive Domain.* London: Longmans, Green & Co.

Tips for using AI:

1. AI can be used as a **source of inspiration** for formulating learning objectives. Important variables include the subject, learning level and focus of the course.

Example prompt:

```
You are a very experienced teacher at a Swiss university, and you are asked
to teach a [INSERT TEACHING COURSE] for the [INSERT STUDY COURSE] programme
in the [INSERT SEMESTER] semester on [INSERT TEACHING COURSE TOPIC]. What
specific content do you propose to work on? Formulate five learning
objectives that learners should be able to achieve by the end of the
semester. The learning objectives should be relevant to the learners'
everyday working life.
```

2. If the teaching materials underpinning the course content are already known, they can serve as a **database** for the AI **to formulate specific learning objectives**.

AI also provides valuable support in formulating learning objectives across different skill levels.

Example prompt:

```
You are a very experienced teacher at a Swiss university, and you have to
teach a course on [INSERT COURSE COURSE] in [INSERT SEMESTER] on [INSERT
COURSE TOPIC]. Based on the following content [INSERT NUMBER OF LEARNING
OBJECTIVES], formulate the learning objectives to be achieved by the
learners at the end of the semester. Formulate the learning objectives for
the following levels of Bloom's cognitive taxonomy: knowledge,
comprehension, application, analysis and synthesis. The learning objectives
should be relevant to the learners' everyday working life. Content: [INSERT
SECTION OF TEXT (IN GPT 3.5) OR FILE (IN GPT 4 OR 4O)].
```

3. Once learning objectives have been formulated, generative AI can also be asked to suggest a **suitable format for performance assessment**.

Example prompt:

```
You are an experienced lecturer at a Swiss university, and you are giving
a [INSERT LECTURE FORMAT] on [INSERT LECTURE SUBJECT] in [INSERT STUDY
COURSE] in [INSERT SEMESTER]. The learning objectives are [INSERT LEARNING
OBJECTIVES]. The course will be attended by [INSERT NUMBER OF LEARNERS]
learners and [INSERT NUMBER OF LEARNERS WHO CAN SUPPORT THE CORRECTION]
persons have the capacity to correct the performance record. The amount of
correction should be appropriate to the capacity available. Learners
should be able to complete the assessment independently within [INSERT
DURATION OF ASSESSMENT AND/OR TIME]. What forms of assessment are
appropriate for testing the [INSERT COMPETENCES]?
```

PLANNING OF THE ASSESSMENT

An assessment promotes learning (formative) and/or has a qualifying (summative) function. The format of the assessment is aligned with the learning objectives and teaching/learning activities (constructive alignment): Is it appropriate to collect and assess learner performance orally, in writing (online or paper and pencil, closed or open book), or practically? Is it better to visualise the learners' performance in the form of a single event or by means of several individual partial performances (e.g. learning portfolio)? If the latter, how are the individual performances weighted in the overall assessment?

Practical tips:

→ Be aware of the framework conditions and institutional resources (e.g. assessment timing, rooms, technical equipment, human resources, compensation for disadvantages).
→ Prepare learners for the assessment by allowing them to familiarise themselves with the format through previous assessments or mock examinations. If necessary, they can also practise giving and receiving feedback.
→ Inform learners about the content, procedure, permitted aids and assessment criteria to prepare them optimally and reduce exam anxiety.
→ Define a valid form of assessment and/or type of feedback for the chosen assessment format, and incorporate this into the planning of teaching and learning activities (e.g. use of peer feedback).
→ Use a checklist for preparatory tasks, training participants (e.g. supervisors, examiners, correctors) and for the organisational process of the assessment.

Useful resources:
Checklists from PH Zurich (in German):
https://ilias.phzh.ch/goto.php?target=pg_138136_3493532&client_id=phzh&lang=en

Checklist from ETH Zurich:
https://ethz.ch/staffnet/en/teaching/academic-support/performance-assessments/examination-development.html

Tips for using AI:
1. AI can be used to generate ideas for alternative, authentic forms of assessment.

Example prompt:

```
You are a highly experienced teacher at a Swiss university who is well
versed in developing innovative and effective authentic assessments. These
assessments enable learners to develop and demonstrate their learning.
Your task is to create [NUMBER] authentic [FORMATIVE OR SUMMATIVE]
assessments for my [TYPE OF EVENT, LEVEL AND COURSE] which deals with
[TOPIC]. The assessments should measure [STANDARDS, LEARNING OBJECTIVES].
Assessments should include practical application, complex tasks, multiple
response formats and meaningful feedback. [OPTIONAL IF SUMMATIVE:
INCLUDING VERIFICATION THAT THE STANDARD HAS BEEN ACHIEVED]. The
[FORMATIVE OR SUMMATIVE] assessments should be appealing to learners and
effectively demonstrate their learning and improve their skills and
understanding of the subject in a meaningful way. Be creative and unique,
do not add [INSERT RESTRICTED SPECIFICATIONS].
```

CREATION OF THE ASSESSMENT

When creating an assessment, the following quality criteria must be considered: the assessment should be the same for all learners (objectivity) and cover the learning objectives to be tested in a representative manner (validity). It should also allow conclusions to be drawn about the extent to which a learner has achieved the competences to be acquired. Learning objectives form the evaluation standard for an assessment.

Careful construction of the individual tasks/assignments or a sufficient number of tasks make it possible to measure the competences to be acquired with a high degree of accuracy (reliability). Feedback from subject-matter experts on the content of tasks is helpful.

Practical tips:

→ Ensure the weighting of subtasks and assignments reflects the weighting of content in the course.

→ Take previous experience, evaluation results, and results of task quality analyses into account in the design.

→ Create a model solution with points/a rubric (also for formative feedback) and a grading scale. These have been reviewed by another expert (see the ASSESSMENT AND GRADING phase).

Useful resources:

Guide to creating good multiple-choice questions at ETH Zurich:
https://ethz.ch/content/dam/ethz/main/ethzurich/education/lehrentwicklung/files_DE/Leitfaden_MCfragen.pdf
Guide to creating good multiple-choice questions at ZHAW:
https://digitalcollection.zhaw.ch/bitstream/11475/14508/1/2018_SML_MC%20Aufgaben.pdf

Tips for using AI:

1. Use AI to learn about the basics of various assessment formats.

Example prompt:

```
You are an extremely experienced teacher at a Swiss university and are
giving a [INSERT TEACHING SEMESTER] course on [INSERT TEACHING COURSE
TOPIC] in the [INSERT SEMESTER] semester. As an assessment format, you
would like to create a [INSERT CHOSEN FORMAT].

What should lecturers consider with regard to the structure of the
questions/tasks and the overall composition of this assessment format?

or

Describe the structure of a multiple-choice question[1].

or

According to Obrist and Städeli (2010), an examination question consists
of an information section and a question section. Explain the structure of
the information and question sections.

or

According to Hein (2008), the question part of an examination question
consists of a task stem and answer options. Explain the structure of the
question stem and answer options.
```

2. Use AI as a source of inspiration when designing content, particularly for multiple-choice questions, open-ended questions and case studies.

Example prompt for designing a multiple-choice exam:

```
You are a highly experienced teacher at a Swiss university, and you are
giving a [INSERT LECTURE FORMAT] on [INSERT LECTURE SUBJECT] in [INSERT
STUDY COURSE] in [INSERT SEMESTER]. You have selected a multiple-choice
examination as the assessment format.

Create [INSERT NUMBER OF QUESTIONS] multiple-choice questions on [INSERT
TOPIC] at the [INSERT TAXONOMY LEVEL] of Bloom's Cognitive Taxonomy with
[INSERT NUMBER OF CORRECT ANSWERS] correct answers and [INSERT NUMBER OF
DISCETRACTORS] distractors.

or

…Based on the text [INSERT TEXT IN '…'], formulate a multiple-choice
question with [INSERT NUMBER OF WRONG AND CORRECT ANSWERS] answers. The
difficulty of the task should correspond to [INSERT TAXONOMY LEVEL] in
Bloom's Taxonomy.
```

[1] Please note: the question type “multiple choice” is used in English-speaking countries to describe a selection task in which only one answer option is correct (in German-speaking countries, this corresponds to a single-choice task). Selection tasks in which several possible answers can be correct are usually referred to as multiple-response questions, also known as “check all that apply” or “multiple-answer” questions.

3. Use AI to help improve the structuring of questions so they better meet quality criteria. This includes ensuring consistency between the wording of the question stem, items and explanations. AI can also assist in creating clear and fair distractors, adjusting the language level, and checking open-ended questions for accuracy and clarity.

Example prompt:

```
…students [INSERT STAGE, PROCEDURE AND INSTITUTION] have studied the
subject [INSERT TOPIC]. In order to assess performance, I have formulated
the following multiple-choice question with the following possible
answers:

[INSERT MULTIPLE-CHOICE QUESTION WITH CORRECT ANSWERS AND DISTRACTORS IN
'…'].

Improve the wording of the choices.

or

…Formulate the distractors in such a way that they are not obviously
false. Avoid using absolutes such as 'always', 'never', 'always',
'exclusively'.
```

IMPLEMENTATION OF THE ASSESSMENT

Irrespective of the learner's performance to be assessed, the same conditions must apply to all participants (objectivity of implementation). The performance to be assessed varies according to the assessment format and influences the assessment process (see the ASSESSMENT AND GRADING phase). Guidance to facilitate learning, whether through formative feedback or otherwise, is appropriate depending on the learning objectives and the assessment format (see the FORMATIVE GUIDANCE BY THE LEARNER/TEACHER phase).

Practical tips:

→ Provide learners with all relevant information about the assessment (e.g. verbal or written instructions).
→ Ensure that all those involved (examiners, minute-takers, supervisors, correctors) are trained to guarantee the assessment is fair.
→ Make appropriate arrangements for learners with compensatory disadvantages.

Useful resources:

Checklists for examiners and an exam protocol are available via the UZH teaching tools:
https://teachingtools.uzh.ch/asset/648abfb5e6b0bada34059952/download
https://teachingtools.uzh.ch/asset/65d87b66d0c0ae33b7013233/download

Tips for using AI:

1. Use AI **to formulate assessment instructions for learners** and to simplify the instructions for lecturers, supervisors and others involved in the assessment.

Example prompt for writing assessment instructions:

```
You are a highly experienced university teacher at a Swiss university of
[subject area]. As a performance assessment you carry out an [INSERT
ASSESSMENT FORMAT] with the learners. Write instructions for the learners
to complete the assessment which include the following [INSERT CONTENTS
(e.g. what resources are allowed, seating arrangements, time allowed for
completion, emergency contact details etc.)]. Structure the instruction as
follows: [INSERT STRUCTURING DETAILS]. Write the instruction [IN LETTERS /
IN FULL FORMULA]. The instruction should be written in simple and
understandable language and contain a maximum of [INSERT NUMBER OF PHRASES
/ WORDS].
```

2. Use AI-supported systems to assist in **identifying and implementing compensations for disadvantages**. Implementation typically requires AI-powered software, such as screen readers, Braille translators, sign language interpreters or speech recognition tools.

3. Use AI-assisted proctoring software for online exams where necessary to **limit cheating attempts**.

FORMATIVE GUIDANCE BY TEACHER / PEERS

Regardless of the assessment format, it is important to provide learners with formative support throughout their learning process. Individual support can help identify misunderstandings and difficulties, discuss suggestions for improving performance, and encourage critical thinking. Feedback can occur at different levels: from teacher to learner, or from learner to learner—that is, peer feedback. The latter reduces the supervisor's workload while also promoting learners' understanding of good performance, communication skills and mutual respect.

Practical tips:

→ Design feedback discussions constructively and base them on a structure that promotes learning (see, e.g., Henderson & Philips, 2015).
→ Establish a productive feedback culture within the course, ensuring that the recipient's understanding (feedback uptake) is addressed.
→ Familiarise yourself with technical options for formative support (e.g. audio or video feedback).
→ Define the frequency and timing of (peer) feedback and communicate this clearly to all participants.
→ Use rubrics and assessment grids during the work process as tools for guidance and (independent) evaluation of performance levels.

Useful resources:

Henderson, M. & Phillips, M. (2015). Video-based feedback on student assessment: Scarily personal. *Australasian Journal of Educational Technology, 31*(1), 51–66. DOI: https://doi.org/10.14742/ajet.1878

Methods for organising feedback from the Zurich University of Arts (ZHDK):
https://designtools.zhdk.ch/#activities=1461

Tips for using AI:

1. Use AI to find **inspiration for assessment settings**, especially those involving formative support and feedback formats.

Example prompt:

```
You are a highly experienced teacher at a Swiss university, and you design
your [INSERT TEACHING FORMAT] using [INSERT NUMBER OF ECTS]. Finally, you
summatively assess your students' learning using [INSERT ASSESSMENT FORMAT
OR METHOD]. Over the course of the semester, you will provide learners
with formative feedback on their [INSERT PERFORMANCE/ WORK PROCESSES] to
produce a representation of their knowledge in different forms [INSERT
FORM; e.g. oral, written], at different times [INSERT TIMES] and through
different feedback settings [INSERT FEEDBACK SETTING; e.g. peer feedback]
using [INSERT FEEDBACK TOOL; e.g. rubric].

Create a table by entering the list of assessment activities [INSERT
FORMS] in the rows and the following dimensions in the columns for each
[INSERT PERFORMANCE/LEARNING PROCESS]:

      • Time of task: initial, continuous, final (when?)

      • Type of activity: introductory, applied, conceptual, synthesizing
      (aim, for what?)

      • Voluntary / compulsory (what?)

      • Grouping of learners: individuals, pairs, small groups, entire
      course (how?)

      • Person providing assessment / feedback: tutor, peer assessment,
      self-assessment, AI (who?)

      • Forms of feedback: written, audio feedback, video feedback,
      verbal (which?)

      % (How much the assessment activity is weighted. In the end, the
      sum of all assessment activities must be total 100%).
```

2. Use AI as an additional **resource in the feedback process** alongside tutors, peers and the learner.

Interaction and dialogue between AI and learner can act as formative guidance in the learning process.

Critical questioning (a reflexive process) of the AI's output can encourage the AI to provide more precise answers and strengthens critical thinking on the part of the learner, which has a positive effect on the learning process.

ASSESSMENT AND GRADING OF STUDENT PERFORMANCE

Sample solutions or rubrics are useful tools for assessment (assignment of performance to grades). They ensure fair and objective assessment (assessment objectivity) and increase transparency for students.

A factual reference standard is central to grading (allocation of points achieved to a grade): performance is assessed based on previously defined criteria, allowing the achievement of learning objectives to be accurately reflected.

Practical tips:

→ Use available sample solutions, evaluation grids and report templates.
→ Define the grading scale in advance, specifying which scores correspond to which grades.

→ Establish a clear correction workflow, including deadlines for marking, storage, submission of grades and the appeal period.
→ Train correctors and inform them about the correction tools to be used. Recommendation: use serial and anonymous marking procedures for quality assurance.
→ Organise the archiving of transcripts and the procedures for examination inspection.

Useful resources:
A helpful collection of rubric templates from the Association of American Colleges and Universities (AAC&U):
https://www.aacu.org/initiatives-2/value

Tips for using AI:
1. Use AI to support the assessment and grading process by helping to design rubrics. Be sure to specify the performance criteria and levels; other rubric features can then be customised as needed.

Example prompt for creating a rubric:

```
You are a highly experienced teacher at a Swiss university in the subject
area of [INSERT SUBJECT AREA]. Create a tabular rubric that will be used
to assess different aspects of [INSERT SUBJECT OF ASSESSMENT], including
the criteria [INSERT PERFORMANCE CRITERIA TO BE EVALUATED WITH THE
RUBRIC]. Each criterion is given a specific score from 0 to 3 reflecting
the level of performance for that criterion (0 point (not met), 1 point
(partially met), 2 points (fully met), 3 points (met expectations)).

OPTIONAL: Weight the content of the criterion [SELECTION OF ONE OR MORE
CRITERIA] with a factor of 3, the criterion [SELECTION OF ONE OR MORE
CRITERIA] with a factor of 2, other criteria [SELECTION OF ONE OR MORE
CRITERIA OR MORE CRITERIA] with a factor of 1. On the right side of the
table, add a column labelled "Weighting", which contains the weighting
factor for each criterion. Add a second blank column on the right called
"Total". Add a third blank column on the right called "Comments". Suggest
also a grading scale according to the Swiss grading system with a concrete
point system.
```

2. Use AI to help **formulate personalised feedback** for learners.

Example prompt for supporting feedback formulation:
The following prompts assume that a rubric with individualised feedback (in bullet points) has been written in the comments column for each learner and uploaded into ChatGPT. Please note that importing learner data and performance into AI raises privacy concerns. This step must therefore be carefully prepared; for example, personal names should not be included when inputting data into the AI.

```
PROMPT 1: Use this section for the following request: [INSERT CONTENT (IN
GPT 3.5) OR UPLOAD DOCUMENT (IN GPT 4 OR 4o)].

PROMPT 2: You are an experienced teacher at a Swiss university who wants
to support the learning process of your students in an optimal and
individual way and therefore you attach great importance to feedback that
is conducive to learning. The Comments column contains the performance
rating for each criterion, as well as any other comments about the
performance. Based on the performance rating ("Total" column) and the
individual comments ("Comments" column), formulate detailed, constructive,
learning-promoting feedback in continuous text that addresses both
positive and critical aspects of the performance and makes concrete
suggestions for improvement. The feedback should be approximately [NUMBER
OF CHARACTERS] characters long.
```

ANALYSIS OF TASK QUALITY

The level of difficulty and quality of items (especially multiple-choice and short-answer questions) can be determined objectively through statistical key figure analysis. This helps identify flaws in the assessment design and optimise tasks for future assessments.

Practical tips:

→ Check for a high degree of consistency between items (reliability; Cronbach's alpha).
→ Ensure the distribution of scores approximates a normal distribution.
→ Verify that items maintain an appropriate and consistent level of difficulty (P-value).
→ Check whether the tasks were correctly completed by high achievers as compared to low achievers (selectivity).

Useful resources:
Explanation of each measure:
https://teachingtools.uzh.ch/asset/6361452d33def1ab920ce0b3/download

Tips for using AI:
AI can support the following tasks:

→ Interpreting scores (e.g. Cronbach's alpha) and translating statistical output into plain language
→ Assisting with programming for analysis (e.g. in R)
→ Providing help and inspiration for revising items flagged in quality analyses
→ Comparing the test blueprint with the designed assessment

Note: Depending on the AI's purpose, it can be helpful to provide the course's learning objectives, learning content, blueprint and the exam questions used (and analysed).

Example prompt for interpreting numerical values:

```
You are a highly experienced statistician at a Swiss university, and you
teach in [INSERT DIVISION]. You have carried out a [INSERT CLOSED
ASSESSMENT FORMAT] to check the performance level of the students. The
result of the quality analysis is: [INSERT VARIABLE RESULT (at item or
test level / DOWNLOAD EXCEL FILE WITH ALL VALUES]. Interpret the result in
terms of how the quality, fairness and validity of the assessment could be
improved if it were administered again.
```

EVALUATION OF THE COURSE/ASSESSMENT

Evaluations are used for quality assurance and the enhancement of teaching. A distinction can be made between course evaluations and assessment evaluations. In addition to institutional evaluation schemes, there are various ways to carry out evaluations independently.

Practical tips:

→ Evaluations should be timed in such a way that meaningful adjustments can be made afterwards.
→ They can also be used as a tool for self-reflection and as an artefact to be included in a teaching portfolio.
→ Discuss and interpret evaluation results with programme leaders to support reflection and guide programme improvements.

Useful resources:
Guidelines for the evaluation of study programmes at the University of Bern:
https://www.philnat.unibe.ch/ueber_uns/e95924/e258233/e321619/Leitfaden_StudienprogrammEvaluation_final_ger.pdf

Tips for using AI:

1. AI can serve as a helpful source of inspiration when **formulating evaluation questions, categories and planning**. An important factor is clearly specifying the object to be evaluated.

Example prompt:

```
You are a very experienced teacher at a Swiss university in the field of
[INSERT FACULTY]. You want to evaluate your [INSERT TEACHING FORMAT]. You
want to evaluate both the [INSERT ASSESSMENT FORMAT] and the course.
Create assessment categories and an assessment plan.
```

2. You can also specify particular survey objectives to pursue at the end of the assessment in a follow-up prompt. The AI tool can assist you in creating an evaluation questionnaire. For example, you might use the following follow-up prompt:

Example prompt:

```
Create an evaluation questionnaire.
```

3. You can use additional follow-up prompts to find inspiration for your evaluations, receive suggestions for evaluation types, and then try them out yourself.

TEAM

This assessment cycle, including appropriate recommendations for the integration of generative AI, was developed by the E-Assessment cluster between 2023 and 2024 as part of "LeLa – LernLabor Hochschuldidaktik für Digital Skills".

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