

Intended Learning Outcomes and GenAI

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Introduction

The rise of generative AI (genAI) tools is set to transform education in ways that are difficult to predict. In particular, higher education must adapt in two key ways: a) by aligning itself with a new reality – a role that may be more reactive or even defensive; and b) by offering both the foundations and the guidance needed to shape our future relationship with emerging technologies – a role that is more active and forward-looking.

As part of my Educational Research Fellowship, I focused on *Intended Learning Outcomes* (ILOs) at both the course and programme levels. Lecturers report that, when revising their assessments in response to generative AI, they often find themselves testing skills that differ from, or even replace, those originally intended. This raises an important question: how should we approach the task of reviewing and rethinking intended learning outcomes?

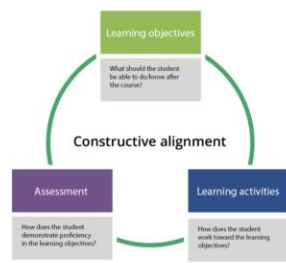
Literature Review

The educational literature contains a substantial body of work advocating for a shift in assessment practice: moving away from a focus on the final *product* toward a greater emphasis on the underlying *process*. At the same time, ILOs correspond to one of the three cornerstones of Bigg's *constructive alignment*, namely, the 'learning objectives', understood as 'what the student should be able to do/know after the course'.

This reveals a mismatch between the call for *process*-oriented assessment and the practice of designing courses based on the desired outcomes students are expected to demonstrate at the *end* of the course.

To investigate this further, I revisited two foundational paradigms that have traditionally guided our pedagogical practice:

Constructive Alignment (Biggs, 1996)



I returned to *constructive alignment* and examined cases in which it was argued to be unsuitable, even prior to the emergence of generative AI. I found that constructive alignment breaks down when the learning goals are not fully and concretely specified. This appears particularly relevant to the current context given the complex and multifaceted ways in which genAI tools interact with and influence student learning.

Bloom's Taxonomy (Bloom, 1956)



One of the ways genAI tools interfere with students' learning process is by propelling them directly into higher-order cognitive tasks (such as comparing and evaluating), bypassing foundational learning stages (such as remembering or understanding). It is important to reflect on the value of mastering lower-order cognitive skills both as a foundation for deeper learning and as valuable in their own right.

The ordering/hierarchy of cognitive skills in Bloom's traditional taxonomy's is fundamentally distorted, and this raises the question of whether and to what extent this is disruptive of learning, or reflects the emergence of new ways of learning. SOLO taxonomy (Biggs & Collis, 1982) with its integrated levels already offers a better way to approach genAI enhanced learning.



Materials & Methods

Overall, this work adopts a *mixed methods* approach:

Literature review extended to include existing guidelines in university programmes, specifically on how learning goals are being adapted to accommodate the presence of genAI tools.

Data from AUC and especially the Academic Core, as a *case study*: a comparative review of how several courses adjusted their assessment and teaching methods, and examination of the consequences of these changes on learning outcomes.

A *thematic analysis* of policy, other institutional documents, and the minutes of several meetings, including those of the AUC Taskforce on GenAI in Education. In addition, the results of student and staff surveys on relevant topics have been considered.

Dissemination of preliminary findings and organisation of *workshops* on the focus of the educational research fellowship (notably UvA Trends and Special Interest Group events). The participants -experienced lecturers and educators- offered valuable feedback, particularly on aspects of practical implementation.

Conclusions and Implications

The proposed Reflective Framework provides guiding questions to support the review and potential revision of the ILOs both at the course and programme levels. The work carried out during this educational fellowship also gives rise to the following two recommendations:

-introduce Intended Learning Processes (ILPs) next to or in some cases instead of Intended Learning Outcomes (ILOs);

-include students structurally in a common exploration of how the use of genAI tools interacts with their learning process and ILOs, using the proposed Reflective Framework.



Findings

A Reflective Framework for Reviewing/Revising ILOs:

Reviewing existing ILOs
what genAI tools *do* or *know*

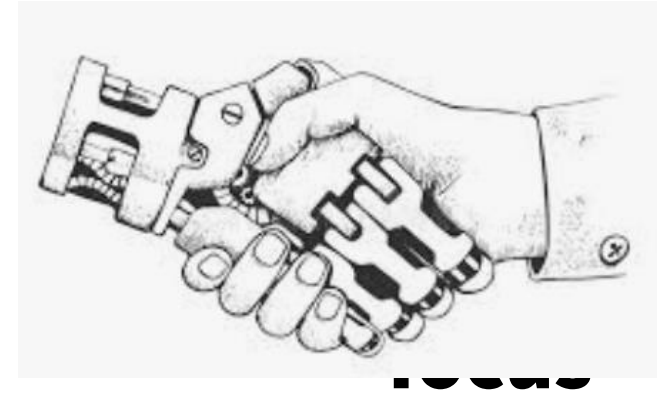
focus on

1. what genAI tools can/should (not) do?

Think of functionalities that can be safely outsourced without the risk of over-reliance. Crucially, ask what is important for students to know how to do by themselves.

2. what information is/should (not) be available to genAI tools?

Think of both intrinsic limitations of genAI in terms of accessing real life situations as well as information that should be guarded for privacy.



Checking for missing ILOs
on critical engagement with genAI

3. when and how does the student need to critically engage with genAI?

Think of known flaws, such as inaccuracies, confabulations, biases.. but also limitations specific to the discipline or course context. These do not necessarily require new skills but a strengthening and adaptation of already familiar foundational critical skills.

4. what is needed for AI literacy?

This is better addressed at the programme level. It covers a list of considerations including basic knowledge about how the technology works, the ability to interact with genAI effectively, ethics and implications, awareness of limitations, and governance issues.

