Beyond Academic Integrity: Mapping Educators' Assessment Challenges in the GenAI Era through the lens of the TPACK model (Short paper)

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מעבר ליושרה אקדמית: מיפוי אתגרי ההערכה של אנשי חינוך בעידן הבינה המלאכותית היוצרת דרך עדשת מודל TPACK (מאמר קצר)

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Abstract

The rapid integration of Generative Artificial Intelligence (GenAI) into higher education has reshaped learning and assessment. As students increasingly use GenAI for academic tasks, educators face a critical challenge: many traditional assessment formats no longer reliably capture authentic student understanding. In response, educators have begun to redesign their assessments to address this shift. Designing AI-aligned assignments can be a challenging task for educators. This study, therefore, explored the challenges educators face when designing assessments in the GenAI era. This study uses the TPACK (Technological, Pedagogical, and Content Knowledge) framework to explore the challenges educators face in redesigning assessments. Data included statements from workshop discussions involving 131 participants and questionnaire responses provided by 31 workshop participants and 31 additional respondents. The most significant difficulties emerged in the Technological Pedagogical Knowledge category. Beyond the technical issue of detecting AI content, educators face deeper pedagogical struggles: maintaining academic integrity, teaching proper AI use, and designing creative, authentic assignments that promote deep learning. In contrast, technological difficulties (TK) and discipline-specific concerns (TPACK) were less prominent. The findings suggest that meaningful assessment in the GenAI era depends less on controlling AI use and more on articulating clear pedagogical intentions that guide principled assessment design.

Keywords: Assessment redesign, GenAI in higher education, TPACK framework.

Introduction

The rapid advancement and widespread adoption of generative artificial intelligence (GenAI), exemplified by tools like ChatGPT, are fundamentally reshaping the landscape of education. GenAI's ability to produce written reports, design solutions, and simulate reflective thinking raises doubts about the validity of traditional assessments as evidence of learning, and its impact on academic evaluation raises urgent attention (Chaudhry et al., 2023). A recent systematic review highlights growing institutional concerns, particularly in high schools and universities, about academic integrity, authorship, and originality, as educators struggle to distinguish student-written work from AI-generated content (Zhao et al., 2024). Rather than relying solely on detection-based approaches, a more effective strategy may involve rethinking assessment design (Lye & Lim, 2024).

Stemming from this rapid technological shift, many educators are unprepared to adapt their assessment practices to the GenAI era. Many lack sufficient training, resources, or institutional support to design assessments that are both pedagogically sound and resistant to AI shortcuts (Lee et al., 2024). Redesigning tasks that resist AI misuse demands time, expertise, and institutional support (Winerö & Utterberg Modén, 2024; Celik et al., 2022). Although some studies have reported teachers' need to redesign assignments (Hopfenbeck et al., 2023), questions remain regarding the specific challenges educators face in practice. Accordingly, this study aims to identify the challenges educators face in redesigning assessments in the GenAI era.

Effective assessment redesign in this context demands the integration of technological understanding with pedagogical strategies and content knowledge. To frame the inquiry, the TPACK framework (Mishra & Koehler, 2006) was selected. The central research question is: What challenges do educators face in designing assessments in the GenAI era?

Methodology

Participants

The study included 131 educators who took part in a workshop titled "Designing Assessment Tasks in the Age of Artificial Intelligence". Participation was open to lecturers in academia or teachers teaching upper secondary school levels. At the end of the workshop, 31 participants completed the questionnaires. Due to the low response rate, the questionnaire was also distributed to lecturers and secondary school teachers, yielding an additional 31 responses for a total of 62 respondents (13 men, 49 women, age M=46.7, SD = 15.94).

Measurements

Perceived challenges in redesigning assessment in the GenAI Era questionnaire. To capture participants' perspectives on the challenges of redesigning assessment in the GenAI era, they responded to an open-ended question: "What challenges do you experience when redesigning assessment tasks in the era of GenAI?".
Workshop transcripts. Four of the six workshops were recorded on video and transcribed for subsequent qualitative analysis.

Procedure

The study was conducted over six months and included six separate workshops, titled "Designing Assessment Tasks in the GenAI Era", each lasting two hours and involving a different group of participants. Five of the workshops were delivered via Zoom, and one was conducted in person.

Data analysis

A hybrid inductive-deductive thematic analysis was employed. The process began inductively (Braun & Clarke, 2006) to identify recurring challenges. Subsequently, as the themes demonstrated a fit with the TPACK framework, the analysis proceeded deductively to map these difficulties into the framework's categories. Coding was performed manually by two coders until consensus was achieved.

Results

Educators' challenges were explored through qualitative analysis of open-ended responses and workshop discussions, organized using the TPACK framework (see Table 1). Two themes fell under Technology knowledge (TK): **(1.1) Access and Usability Barriers** (4 mentions)- Participants noted the difficulty of using advanced language models requiring paid access, alongside the need for user-friendly tools. **(1.2) Lack of Technological Knowledge** (6 mentions)- Only six participants expressed unfamiliarity with tools, limited experience, and difficulty keeping pace with rapid developments.

Most themes emerged under Technological Pedagogical Knowledge (TPK): **(2.1) Academic Integrity** (38 mentions)- Concerns included plagiarism and students copying AI-generated content. **(2.2) Teaching Proper AI Use** (14 mentions)- Highlighted the need to guide students in using AI critically and responsibly. **(2.3) Lack of Pedagogical Knowledge** (4 mentions)- Participants were unsure how to integrate AI effectively into teaching and learning. **2.4 Adapting tasks to AI capabilities and limits** (6 mentions)- Challenges involved aligning tasks with AI's affordances and limitations. **(2.5) Designing Deep Learning Tasks** (16 mentions)- Included difficulties in creating tasks that foster critical thinking and understanding. **(2.6) Need for Creativity** (3 mentions)- Teachers noted that redesigning tasks to align with GenAI demands greater creativity. **(2.7) Defining Objectives** (2 mentions)- AI complicates setting clear learning goals. **(2.8) Asynchronous Course Assessment Design** (2 mentions)- Large-scale online courses assessment limits observation and raises concerns about authenticity. **(2.9) Erosion of Teacher-Student Trust** (1 mention)- One teacher noted that suspicion of AI use can harm lecturer–student trust.

One theme aligned with TPACK: **(3.1) Disciplinary Differences**- Need for discipline-specific assessment design. Additional themes outside TPACK included: **(4.1) Time and Effort** (9 mentions)- Redesigning tasks requires significant time and reflection. **(4.2) No Challenges** (10 mentions)- Some educators reported no difficulty in adapting assessments.

Overall, the findings show that most challenges lie at the intersection of pedagogy and technology. Despite the introduction of new technological tools, technological-pedagogical concerns remain central.

Table 1.   Challenges mapped by the TPACK framework

TPACK	Challenges in redesigning assessments in the GenAI era	Total	Illustrative quotes
1. TK	1.1 Access and Usability Barriers	4	"[It is challenging to] make the tasks convenient to operate with artificial intelligence"
	1.2 Lack of Technological Knowledge	6	"I need more experience"
	Total TK mentions in themes	10	
2. TPK	2.1 Academic Integrity	38	" The challenge is thoughtless copying" "I gave up on the assessment tasks"
	2.2 Teaching Proper AI Use	14	"The biggest challenge is to teach students how to work correctly with artificial intelligence"
	2.3 Lack of Pedagogical Knowledge	4	"I feel like I need to take this moment to learn, not only the tool, but also the experience of it, the way they learn it"
	2.4 Adapting tasks to AI capabilities and limits	6	[It is challenging]" to formulate assignments that are adapted to the era of artificial intelligence"
	2.5 Designing Deep Learning Tasks	16	"it challenged me to create a homework assignment that also requires the student to understand"
	2.6 Need for Creativity	3	"designing tasks requires creativity that I don't always have"
	2.7 Defining Objectives	2	"it challenged me to set the objectives I defined for the assessment"
	2.8 Asynchronous Course Assessment Design	2	"When a large number of classes are asynchronous, and there are very large groups of students, the issue is how do we really want to do an assessment that will be optimal and reflect the knowledge they have acquired"
	2.9 Erosion of Teacher-Student Trust	1	"An atmosphere of suspicion towards the students is created"
	Total TPK mentions in themes	86	
3. TPACK	3.1 Disciplinary Differences	1	"There's a lack of consideration for the differences between different disciplines".
4. Other	4.1 Time and Effort	9	"This requires more work from me as a teacher"
	4.2 No challenges	10	"It wasn't difficult for me to redesign the assignments"

Discussion

A qualitative analysis using the TPACK framework reveals that the primary challenges in assessment redesign lie within the Technological Pedagogical Knowledge (TPK) domain. Beyond the technical issue of detecting AI content, educators face deeper pedagogical struggles: maintaining academic integrity, teaching proper AI use, and designing creative, authentic assignments that promote deep learning. In contrast, technological difficulties (TK) and discipline-specific challenges (TPACK) were less prevalent. Two additional themes emerged: the significant time and effort required for redesign, and conversely, a lack of perceived difficulty among educators who likely do not perceive redesign assessment as difficult. The findings highlight a critical gap: while the technical adoption of GenAI is relatively easy, integrating it pedagogically is complex. The findings point to a growing need for pedagogical and assessment literacy that supports educators in designing meaningful assessments within AI-mediated learning environments. Rather than focusing solely on controlling or detecting AI use, educators must re-center assessment design around clear pedagogical intentions and principled decisions about how GenAI is positioned within learning and evaluation processes.

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