

Using Artificial Intelligence in Higher Education and Research: A Matter of Multifaceted Reciprocal Trust

Cezar Scarlat

 <http://orcid.org/0000-0002-7422-1362>

National University of Science and Technology POLITEHNICA Bucharest, Romania

ABSTRACT

There are two main issues related to the use of GenAI in higher education: (1) relationships between students (from undergraduate to master to doctoral students) and their academic mentors (specifically trust relationships between them), where GenAI can be used by both sides, and (2) relationships between doctoral students and their doctoral supervisors in the doctoral research process that involves the publication of research results as well, where GenAI can also be used by all parties involved (hence the “trust question”). The second issue is more complex because with multi-party relationships between two apparently opposite sides (students versus professors in general), what side (metaphorically) will the GenAI take? The same question is posed when a scientific paper is submitted to an academic journal: what side will the GenAI take? The authors’ or the journals’ (editors and reviewers) side? Several perspectives on GenAI impact are presented, and further questions are formulated. Both secondary and primary research are used as well as cases and examples.

INTRODUCTION

The advance of artificial intelligence (AI) is fast and ubiquitous, across countries, sectors, industries, and professions. The education sector is not immune to the generative AI (GenAI) emergence. Moreover, higher the education level, more visible and impactful is this phenomenon.

Large language models (LLMs), ChatGPT (launched in November 2022), and the scores of applications based on artificial intelligence (AI) – even remote work at its dimension of today – were not in sight before pandemic (Scarlat, 2023a; 2023b), which proved to be a turning point in digitalization. The studies have shown that coronavirus pandemic played a digital accelerator role (Scarlat, 2023a; Scarlat, Stănculescu & Panduru, 2022). The Economist (2022, p. 51) also signalled that pandemic “meant to lead to job-killing automation”, while many studies have shown that AI-supported digitalization and robot-lead automatized processes become dominant (Acemoglu & Restrepo, 2018; Shekhar, 2019; Jurdijanto et al., 2025a, 2025b).

DOI: 10.4018/407440

Understanding AI-Related Concepts

A typology of artificial intelligence (AI) is proposed by (Hutter, Quarel and Catt (2024): Artificial Narrow Intelligence (ANI) already achieved (1980–1997); Artificial General Intelligence (AGI) is emerging (2023–2038); Artificial Super Intelligence (ASI) expected after 2038; and Universal Artificial Intelligence (UAI), which was developed after 2000 as a theory only. They were also discussed by Scarlat and Tudose (2025, pp.41–42).

Hutter, Quarel and Catt (2024, p. 4) describe how ANI has developed to AGI: after “many (successful) attempts at the construction of *Artificial Narrow Intelligence* (ANI), an AI that performs well in a single or narrow class of domains [...], the natural ultimate goal is the creation of AI which is able to match or exceed human intelligence *in a wide class of environments*” – or, in other words, “the term *Artificial General Intelligence* (AGI) is often used to describe a hypothetical agent that can perform virtually all intellectual tasks as well as a typical human could”. The same authors describe ASI as “an agent that is on par or beyond human geniuses exceeding the cognitive performance of most humans in a reasonably broad domain”.

Hutter (2005; 2007) has developed a theory of UAI under the name of *universal algorithmic intelligence*.

There are two terminology confusions, AI-related, which should be signalled and avoided.

The first is the confusion (apparently linguistic, but mainly scientific) between AGI (artificial *general* intelligence) and GAI (*generative* artificial intelligence), also acronymized GenAI. The confusion is not uncommon: back in April 2025, the scientific director playing the role of editor-in-chief of a relatively young regional journal (addressed to scholars and practitioners in business management) equals the two essentially different terms.

GenAI refers to a different set of features, to the ability to generate solutions “to discriminative tasks such question answering, semantic similarity assessment, entailment determination, and text classification” (Radford et al., 2018, p.8). GPT (Generative Pre-trained Transformer), already at its fourth version (GPT-4)–described by Wiggers (2023) as “more reliable, creative, and able to handle much more instructions”–belongs to GenAI category.

The second confusion is related to *digit* vs. *digital* (respectively *digitization* vs. *digitalization*). Moreover, *digital transformation* (a process more complex than *digitalization*) is different than *business transformation*: while the first implies the second, the reciprocal does not necessarily stand true (Scarlat & Tudose, 2025, p. 43). These confusions are met even among business managers and digitalization practitioners.

GenAI impacts activities of companies, employees and customers. Brynjolfsson and collaborators (Brynjolfsson, Li & Raymond, 2023; Baily, Brynjolfsson & Korinek, 2023) studied the impact of GenAI on employees and productivity, concluding that “AI model disseminates the potentially tacit knowledge of more able workers and helps newer workers move down the experience curve [... and] AI assistance improves customer sentiment, reduces requests for managerial intervention, and improves employee retention” (Brynjolfsson, Li and Raymond, 2023). Brynjolfsson’s words about influence of AI on managerial jobs is unforgettable:

Managers who don’t use AI will be replaced by those who do.

This section summarized several AI-related concepts and terms as they appear not only in literature but in practice too, to set the frame and focus on the higher education sector, specifically on how AI is influencing the higher education and research processes.

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