

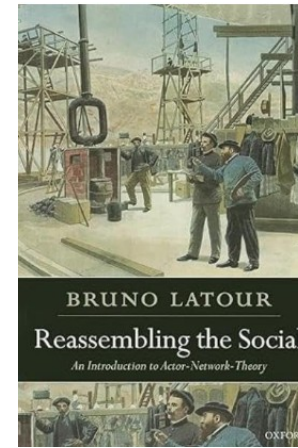
WERA International Research Network for Research on Doctoral Education
(WERA-IRN-DE)
May 20, 2026

**The doctoral dissertation in Italy at the time of AI: notes
for an epistemic cartography**

Daniel Boccacci, University of Ferrara (Italy)

Research question

The artificial intelligence, increasingly recognized as a transformative device in higher academic education (Bond et al. 2024; Floridi, 2025)



How should we conceptualise AI-human interaction in doctoral **dissertations**?

The dissertation is a practice (research, writing, argumentation, revision...) and a node of representations between the ideas of production, communication, codification, and validation of knowledge.

(Honan & Bright 2016)

Research questions

How should we conceptualise AI-human interaction in doctoral **dissertations**?



What significant arrangements are emerging in Italian doctoral communities regarding dissertations in the presence of AI?



The conception of the subject in education

What does it mean:

- human + machine
- augmented intelligence
- socio-technical relations

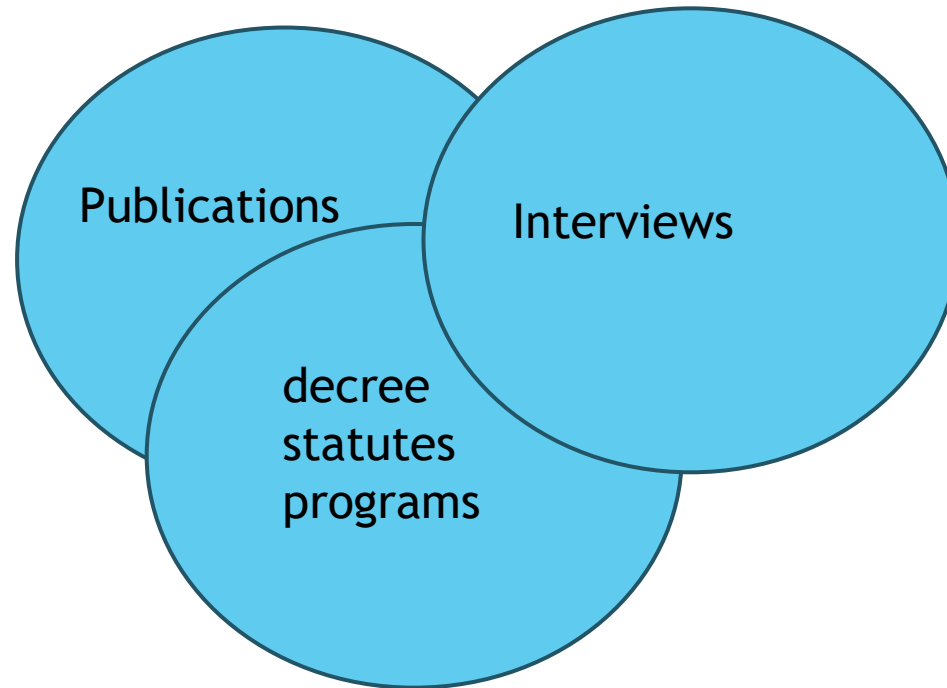
The arrangements defines:

- The idea of **authorship**
- The concept of **intentionality**
- The notion of **comprehension**
- The role of **human experience**

Methodology of Epistemic Cultures

Triangulation as access to “epistemic configuration”

- Develops a multi-level reality
 - discursive- productive
 - subjective-reflexive
 - institutional



Methodology of Epistemic Cultures

Triangulation as access to “epistemic configuration”

Centrality of epistemic practices (Knorr-Cetina, K. 1999)

- 1. Publications as “traces of distributed laboratory”**
- 2. Interviews as access to situated epistemic reflexivity**
- 3. Statutes and programs as epistemic tools**

The online interviews

Style of interview: semi-structured interview

Together they cross a territory of meanings which unfold within a narrative

The selection of interviewees

Participants were selected aimed at identifying individuals who were informationally relevant in order to:

- seek significant epistemic positions
- map discursive configurations

The interviews:

- Are positioned, according to national standards, in the four Scientific Disciplinary Sectors (SSD) of Educational Sciences.
- Have relevant roles within doctoral schools.
- Don't belong to the same university.
- Are authors of relevant publications:
 - producing recognized scientific research (high-impact and highly cited texts)
 - participating in defining disciplinary criteria,
 - contributing to the formation of epistemic practices (teaching, evaluation, research).
- Having conducted research on the topic of AI in Education.

(Corbetta, P. 2014; O'Connor, H. 2015)

The online interviews

Research Design: ANT-Informed Analysis

Here, Bruno Latour's theory becomes a device for constructing the empirical field.

Latour's Actor-Network Theory serve as sensitizing concepts for the construction of coding categories and content analysis.

ANALYSIS

- Interview transcripts
- Content coding
- Data mapping into ANT concepts

Latour's categories

1. Actant

Any entity that produces an effect in the network (human or non-human).

It does not imply intentionality or consciousness.

The dissertation is no longer attributable solely to the human author, but emerges from a network of actants:

- writer
- generative AI
- prompt
- writing interface
- linguistic models
- datasets
- editing software
- platforms (Word, Google Docs)

2. Mediation

AI is not a neutral channel, but an active mediator:

- transforms the meaning of the prompt
- restructures style and tone
- suggests unexpected content
- Changes initial intentionality

Writing becomes "co-produced in translation"

3. Networks

Research and writing are a distributed effect of the action of actors; it is not an individual act but a network:

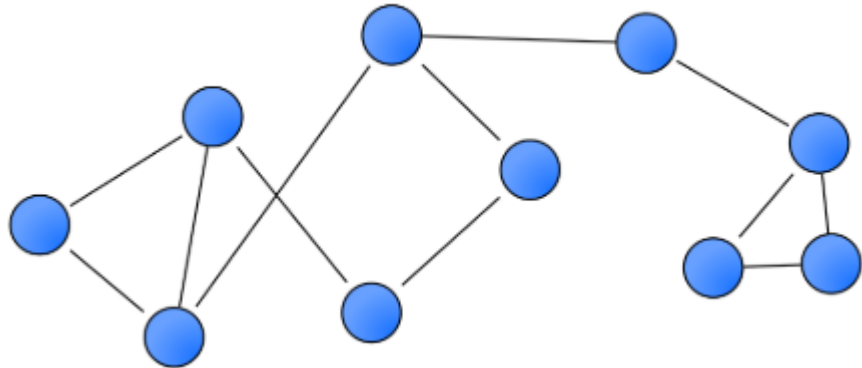
- students
- AI
- platforms
- academic standards
- digital tools
- assessment practices

The process and the text are a stable network effect only temporarily



Human actors

- The PhD student
- Professors
- Academic tutors
- Fellow PhD candidates
- Family
- Online communities (Reddit, Discord, university forums)
- AI system developers
- Companies producing AI systems
- University administration



Non-human actors

- The AI system itself (e.g. ChatGPT)
- Ranking and generation algorithms
- Training datasets
- User interface
- Laptop/smartphone
- Internet connection
- University platforms (Moodle, Teams, etc.)
- Academic regulations
- Assessment rubrics
- PDFs, slides, books
- Available time
- Exam deadlines
- Performance metrics (grades, GPA, CFU credits)
- Prompts entered by the student
- AI-generated outputs

From categories to issues

The authorship in the dissertation

-
- 1. Actant
 - 2. Mediation
 - 3. Networks

DIMENSIONS

- A. Decision-making process
- B. Socio-techno-cognitive configuration
- C. The originality of human actor?

From issues to questions

QUESTIONS

A. Decision-making process

How does human decision change?

What is the nature and the substance of the mediation?

B. Socio-techno-cognitive configuration

How does AI intervene in cognitive action?

C. The originality of human actor?

What connections make the reaserch and the text possible?

(PARTIALS) RESULTS

Decision-making process

A. How does human decision change?

B. What is the nature and the substance of the mediation?

Human agency

Human-AI interaction



A. Centrality of the individual

- centrality of the individual as the authentic agent (cognitive, ethical, relational);
- technology must remain instrumental;
- the difference between Anthropos and Artificial Agents

A. Space for technological agency

- AI is not a neutral tool
- Space for technological agency
- Redefining skills

B. Criticism of interpretive delegation and de-responsabilization

- full human decision-making (direct or indirect);
- critique of the delegation on the definition of in problems and on the interpretation
- Human responsibility: participation constraints (ethical values)
- value of human reflexivity

B. Regulated delegation

- AI as a "cognitive partner" (not a substitute)
- Regulated delegation
- Partial structured delegation
- Learning as a human-technology ecosystem

Socio-techno-cognitive configuration

How does AI intervene in cognitive action?

Human agency

Human-AI interaction



- Risk of reducing human cognition to adaptive, automatable, and predictable functions without adequate critical-humanistic training.
- Algorithmic mediation is an impoverishment of human relationships.
- Risk of standardization of methods and automation of research practices.
- standardization of evaluation and training practices;
- uncritical use of tests, metrics, and learning analytics;
- tendency to reduce learning to what is measurable and standardizable.
- didactic-technical risk: learning reduced to standardized measurements.

Cognitive load: psychological/functional level

It concerns:

- amount of mental effort required
- attention management
- perceived complexity
- information overload

Effect:

measures how the system directly impacts the individual's cognitive experience

Some professors interviewed and authors of publications on AI

Human agency

Fabbri, M. (2021). Emozioni, intelligenza e civiltà. Scarti e parabole evolutive dai Sapiens sapiens all'intelligenza artificiale. In M. Stramaglia (Ed.), *Pedagogia, didattica e futuro. Studi in onore di Michele Corsi* (pp. 353–365). Pensa Multimedia.

Fabris, A. (2025). *Il contenuto dell'AI Act riprende i principi etici più importanti in tema di intelligenza artificiale?* *BioLaw Journal – Rivista di Biodiritto*, 3, 265–267. <https://doi.org/10.15168/2284-4503-3735>

Malavasi, P. (2019). *Educare Robot? Pedagogia dell'intelligenza artificiale*, Vita e Pensiero, Milano.

Perla, L., & Fabris, A. (2025). *Insegnare con l'intelligenza artificiale*. Editrice Morcelliana.

Human-AI interaction

Annacontini, G. (2023). La sfida pedagogica dell'IA: Dalla contrapposizione umano-artificiale alle soggettività future. *Cultura pedagogica e scenari educativi*, 1(2), 014-021.

Ranieri, M., Biagini, G., & Cuomo, S. (2025). AI literacy in higher education: A systematic approach to questionnaire development and validation. *International Journal of Digital Literacy and Digital Competence*, 16(1), 1–25.

Ranieri, M., Cuomo, S., & Biagini, B. (2026). *Artificial intelligence in school: A pedagogical framework for critical AI literacy*. Springer.

Rivoltella, P. C., & Panciroli, C. (2023). *Pedagogia algoritmica. Per una riflessione educativa sull'intelligenza artificiale*. Scholé.

Rivoltella, P. C. (2023). *La conversazione artificiale. Per una post-media education*. Scholé.

Rivoltella, P. C. (2024). *L'intelligenza artificiale: dal concetto al curricolo*. Scholé.

Decision-making process

Human agency

Human-AI
interaction



A. Centrality of the individual

B. Criticism of interpretive delegation and de-responsabilization



Interviewees from

Traditional doctoral schools in Education

- *Scienze della Persona e della Formazione*: Catholic University of Milan, Brescia, and Piacenza
- Dottorato in *Scienze Pedagogiche*: University of Bologna
- Dottorato in *“Scienze Psicologiche, Antropologiche e dell’Educazione”*: University of Torino

A. Space for technological agency

B. Regulated delegation



Interviewees from

Doctoral school in Education and Digital Technologies

DIN (1) Doctorates:

- Learning Sciences and Digital Technologies (LSDT): a national network of 35 universities headquartered at the University of Modena and Reggio Emilia
- Teaching & Learning Sciences: Inclusion, Technologies, Educational Research and Evaluation: University of Macerata

Other municipalities:

- Leadership, empowerment and digital innovation in education and learning (LEDIEL): University of Bari- Digital Humanities & Media Education (University of Pisa)

(1) The DIN is the Doctorate of National Interest program, involving several Italian universities and institutions on strategic research topics of national importance.

Decision-making process

(Clues to be explored further)

Human-AI
interaction

Human agency



- A. Centrality of the individual
- B. Criticism of interpretive delegation and de-responsabilization

- A. Space for technological agency
- B. Regulated delegation



Philosophical and educational background of interviewees

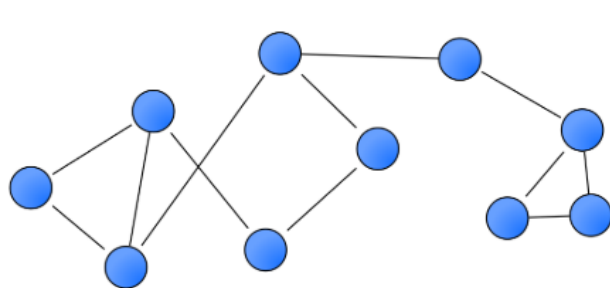


Constructivism
Personalism
Hermeneutics

Constructivism
Personalism
Pragmatism

Three open reflections

- 1) A first look at the content of the interviews reveals a non-monolithic reality, but rather a structure that can be categorized into two polarities.
- 2) The diversity demonstrates a strong connection to the historical and cultural legacy of the various philosophical approaches to Italian education.
- 3) If we take the actantial model as our horizon, then we need to foster a perspective that creates the conditions for practices of encounter, comparison, and dialogue, exchange, and the valorization of diverse perspectives.



References

Bond, M., Khosravi, H., De Laat, M. et al. A meta systematic review of artificial intelligence in higher education: a call for increased ethics, collaboration, and rigour. *International Journal of Educational Technology in Higher Education*, 21, 4 (2024). <https://doi.org/10.1186/s41239-023-00436-z>

Corbetta, P. (2014). *Metodologia e tecniche della ricerca sociale* (pp. 283-316). Bologna: il Mulino.

Floridi, L. (2025). AI as Agency without Intelligence: On Artificial Intelligence as a New Form of Artificial Agency and the Multiple Realisability of Agency Thesis. *Philosophy and Technology*, 38(1), 1–27. <https://doi.org/10.1007/s13347-025-00858-9>.

Knorr-Cetina, K. (1999). *Epistemic cultures: How the sciences make knowledge*. Cambridge, MA: Harvard university press.

Honan, E., & Bright, D. (2016). Writing a thesis differently. *International Journal of Qualitative Studies in Education*, 29(5), 731–743. <https://doi.org/10.1080/09518398.2016.1145280>

Latour, B. (2005). *Reassembling the social: An introduction to actor-network-theory*. Oxford University Press.

O'Connor, H. (2015). *Qualitative online interviews: Strategies, design and skills*. Taylor & Francis.