Institute of Education

Delineating algorithmically mediated and human-mediated pedagogy (incl. lesson planning)

Norbert Pachler and Keith Turvey
UCL Institute of Education

Human (teacher) agency at stake

"What is at stake here is to say that the point of education is never that children or students learn, but that they learn *something*, that they learn this for particular *purposes*, and that they learn this from *someone*. The problem with the language of learning and with the wider 'learnification' of educational discourse is that it makes it far more difficult, if not impossible, to ask the crucial educational questions about *content*, *purpose* and *relationships*."

(Biesta, 2012)

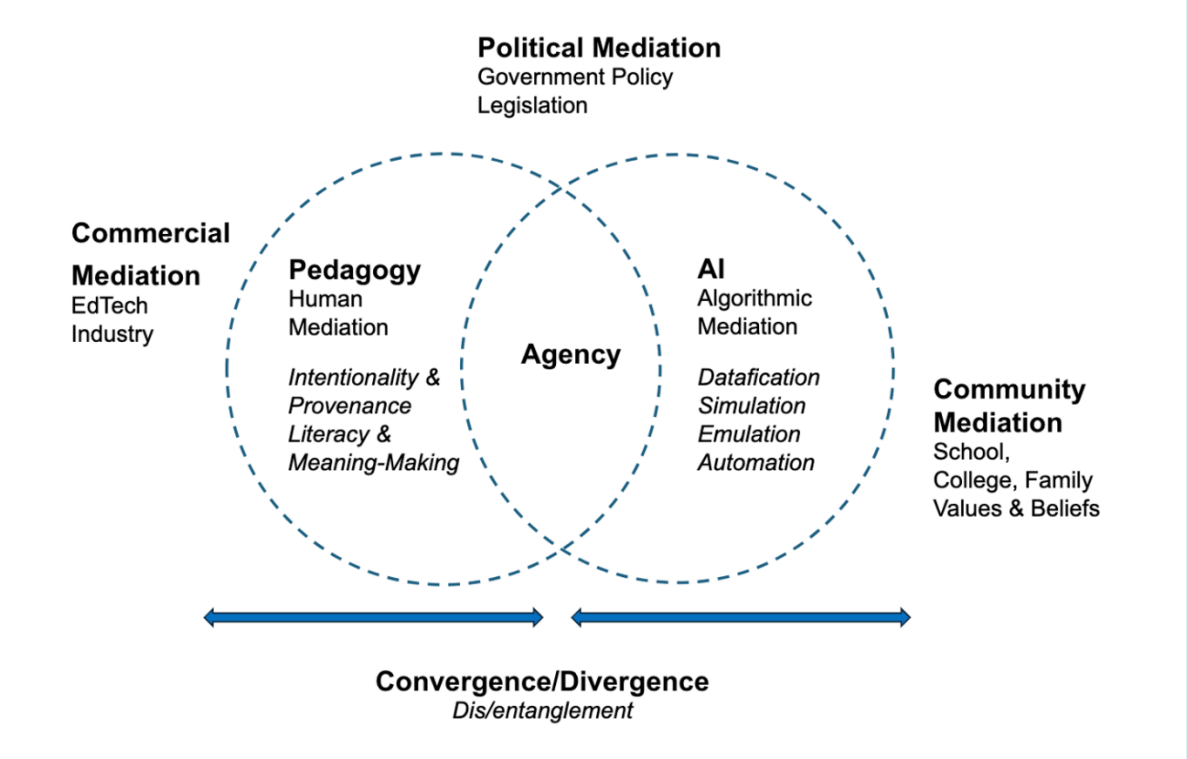
Human-mediated pedagogy: narrative, oracy and dialogue at the core

"The most natural and the earliest way in which we organize our experience and our knowledge is in terms of the narrative form. And it may also be true that the beginnings, the transitions, and the full grasp of ideas in a spiral curriculum depend upon embodying those ideas into a story or narrative form." (Bruner, 1996:121)

'The curriculum becomes a "narratable pathway" towards the formation of identity and agency when "knowing as storying" is valued, promoted and represented. Narratives provide and create space for "pedagogic moments" in which people can connect with themselves, each other, their own culture and tradition, their hopes and aspirations and ultimately an intentional mentored construction of knowledge.' (Goodson and Deakin-Crick, 2014:58)

AI distributes agency through …

- platformization of teaching and learning
- learning analytics
- data infrastructures
- ‘intelligent’ agents/tutors
- automated personalisation
- content generation
- responsive digital environments (e.g. virtual classrooms)



(Turvey & Pachler, 2025)

Challenging myths about AI in Education’

- just a tool
- time/labour saving
- personalized/individualized learning
- anthropomorphic hyperbole
- conflation of simulation and emulation:

“In a recent study of an AI-powered virtual classroom (Zhang et al. 2025), pre-service teachers reported frustration in being unable to incorporate personal relevance into discussions with virtual students in the ways they would with real-world students. Whilst understanding the boundaries between human- and algorithmically-mediated pedagogy is significant, blurring of the boundaries and conflating simulation and emulation can also manifest as hype.”

(Turvey & Pachler, 2025)

Convergent / divergent pedagogies

"If teachers are to be equipped to avoid dependency and atrophy, we argue, they need to be able to identify and delineate clearly the convergent and divergent qualities of human-mediated and algorithmically mediated pedagogy. Without understanding how human and algorithmic mediation both converge and diverge, arguably teachers are less empowered to make critical decisions about how much agency to retain or cede and the potential implications of their pedagogic decisions." (Turvey & Pachler, 2025)

Large Language Models – A poor imitation game?

- they have “no capacity to mean”
- semantics are only latent
- multimodal output is the result of applying textual labels only
- speech is transliterated text-to-speech in the process of which features of speech such as prosody, dialect, gesticulation, embodied context, redundancy, hesitation, circumlocution etc are lost.

(Kalantzis and Cope, 2025:14-15)

“May not machines carry out something which ought to be described as thinking but which is very different from what a man does?” (Turing, 1950: 2)

The case of AI-generated lesson planning: workload panacea or threat to teacher professionalism?

Two arguments often made in support of AI by commercial EdTech providers and political policy makers are that: AI

(1) can accelerate and augment thinking processes; and
(2) frees up time that can be used for more advanced tasks

Counterarguments are:

(1) the risks of abdication of thinking entirely to AI; and
(2) not moving on to more complex, thought-intensive tasks leads to growing dependence on AI and professional atrophy

Lesson planning

- planning as a psychological process of envisioning the future, and of considering goals and ways of achieving them is extremely important in the process of developing deliberate teacher practice and teacher professionalism (Clark and Dunn, 1991; Mutton, Hagger and Burn, 2011)

- it is planning (i.e. selecting and sequencing learning content in line with the students' learning prerequisites, orchestrating cognitively challenging learning tasks and forms of social interaction) that makes the complexity of classroom interaction predictable and manageable (Reigeluth, 2013)

- importance of lesson planning in improving student learning outcomes in that it serves as a cornerstone for effective instruction (Acquah et al., 2024)

- teacher agency in the planning process in the form of evaluation, critique and discernment ensures account is taken of important contextual factors about the social context that are classrooms and schools such as knowledge about individual pupils, envisioning of meaningful learning experiences for pupils, personal curriculum interpretations and the school ethos

- metaphor of "planning as visualisation" (Mutton, Hagger and Burn, 2011) by which they mean the capacity to anticipate the response of pupils and the flexibility to accommodate them, anticipation of what might happen rather than a determination of what would happen, i.e. the capacity to engage in 'reflection in action'.

- as such, lesson planning can help teachers "think about things differently" (Guillame and Rudney, 1993)

Research on AI-generated lesson plans

- diagnoses expectancies with regards enhanced teacher performance and efficiencies (Acquah et al., 2024)
- illustrates considerable weaknesses in the epistemic accuracy, appropriateness or reliability of AI for lesson planning (Powell and Courchesne, 2024; Flavin, Hwang and Morales, 2025)
- identifies the need for teacher-led modifications and caution (Lammert et al., 2024; van den Berg and du Plessis, 2023)
- finds pedagogical biases in AI-generated lesson plans and reduced student agency with opportunities for productive classroom dialogue being restricted (Chen et al., 2025)
- identifies the need for provision of additional context from the curriculum and effective prompts (Malik et al., 2025; Flavin et al., 2025; Ninaus and Sailer, 2022)

Recommendations for teacher professional development

- develop understanding of the limitations/risks of AIED, as well as its potential
- foster and delineate a critical understanding of the distinctive qualities of both human- and algorithmically-mediated pedagogy
- promote a broad pedagogical repertoire and theories of mind to sustain a critical and professional stance in the context of AIED
- demystify the black box tendencies of AI (datafication, simulation, emulation, automation)

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