

Educating for Doubt: Ethics and Intellectual Honesty

Educar para a Dúvida: Ética e Honestidade Intelectual

Nadine Correia Santos¹ 

Keywords: Decision Making; Education, Medical; Uncertainty.

Palavras-chave: Educação Médica; Incerteza; Tomada de Decisão.

In medical training, and even more so in clinical practice, there is an expectation to know, master, and respond with clarity. Doubt is frequently perceived by colleagues, patients, and learners alike as hesitation or insufficient preparation. Yet uncertainty is not incidental to medicine; it is constitutive of it. Biological systems are variable, diagnostic categories are imperfect, and clinical outcomes remain probabilistic rather than deterministic. Clinical reasoning exists precisely because knowledge is incomplete and because uncertainty remains an enduring feature of clinical decision-making.^{1,2} While recent scholarship has proposed practical strategies to prepare trainees for clinical uncertainty,¹ the cultural and ethical implications of framing doubt remain insufficiently examined. If this is the case, then an essential question follows: are we educating physicians to manage doubt, or merely expecting them to conceal it?

Medicine continues, culturally and structurally, to reward certainty. Case presentations are refined, ambiguities are often streamlined, and educational encounters frequently imply that there is a correct answer to be reached. This orientation is understandable, as patients seek reassurance, healthcare systems demand efficiency, and students often gravitate toward the professor who appears certain. However, when certainty becomes performative, doubt is displaced rather than examined. The issue is not whether clinicians experience uncertainty, but whether they are trained to engage with it explicitly and responsibly.

Philosophically, doubt precedes knowledge. Descartes' full formulation, "*Dubito, ergo cogito, ergo sum*", frequently abbreviated to "*Cogito, ergo sum*", foregrounds doubt rather than thought as the starting point of epistemic integrity. Questioning is not a sign of ignorance; it is the condition for knowing well. In medical education, however, doubt is not necessarily framed as an epistemic virtue. Empirical work on tolerance of uncertainty has shown that clinicians' responses to uncertainty are associated with burnout, defensive practice, and levels of professional satisfaction.^{3,4} If competence is defined solely

by decisiveness, doubt will inevitably be marginalized. Yet uncertainty continues to be conceptualized as a personality trait rather than as a competency that can be cultivated and integrated into practice.

Educational practice reflects this tension. We invest in teaching communication skills, shared decision-making, and ethical reflection. Simulation settings prepare learners to discuss risk and probability. Nonetheless, many educational formats remain linear and solvable, privileging diagnostic closure over reflective calibration. Much of the real work of managing uncertainty, therefore, happens in less visible ways. Experienced clinicians navigate uncertainty through planning and continuous monitoring, explicitly naming discomfort and using it as a cue for vigilance rather than avoidance.¹ These are not intuitive capacities but learned behaviors that deserve deliberate modeling in medical training. Without explicit normalization, uncertainty remains privately experienced, publicly suppressed, and unevenly transmitted across generations of clinicians.

The ethical dimension of doubt warrants particular attention. Communicating uncertainty has historically been perceived as potentially undermining patient trust, reflecting a longstanding culture of protective paternalism in medicine.⁵ However, empirical evidence suggests that transparent communication of diagnostic uncertainty, especially when accompanied by a structured plan and clear contingencies, may strengthen trust rather than weaken it.⁶ Ethical clinical practice requires honesty about the limits of knowledge. An ethics that values beneficence and respect for autonomy cannot be reconciled with the performance of unwarranted certainty. The illusion of certainty may provide short-term reassurance but may risk premature diagnostic closure and over- or under-treatment. Cognitive bias literature consistently demonstrates the dangers of overconfidence in clinical reasoning,^{7,8} and qualitative work has shown how clinicians often recognize uncertainty through affective or intuitive gut feelings that precede analytic articulation.^{9,10} In this context, doubt functions not as indecision, but as a safeguard.

To educate for doubt does not mean promoting hesitation. It requires distinguishing confidence from certainty. Confidence reflects the capacity to act responsibly within incomplete knowledge, while certainty implies the absence of ambiguity. The former is essential to professional authority, the latter is often illusory. Educating for doubt, therefore, entails normalizing uncertainty in clinical discourse, modeling the evolution of hypotheses over time, differentiating between uncertainty that may be reduced through additional information and uncertainty that is inherent to biological variability, and equipping

¹Escola de Medicina da Universidade do Minho, Braga, Portugal

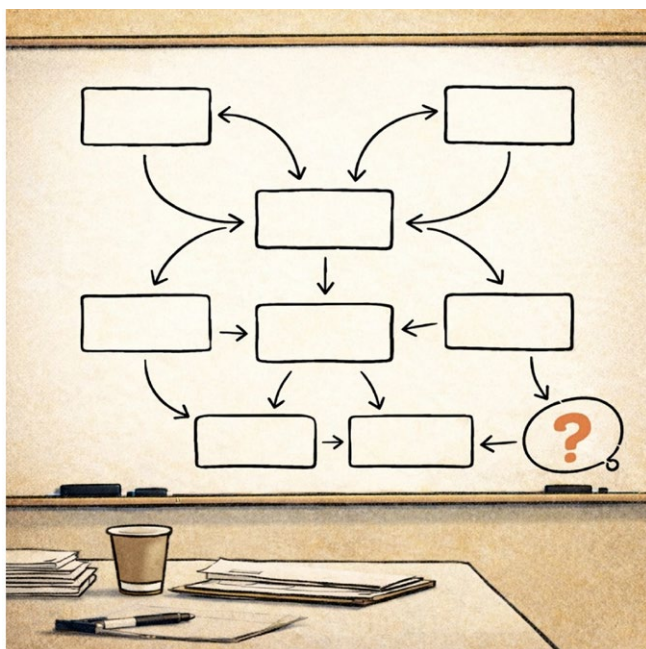
²Editora Associada, RPMI

<https://doi.org/10.24950/rspmi.2864>

learners to communicate these distinctions clearly.⁶ It also requires evaluating not only diagnostic accuracy, but the calibration between judgment and evidence.

Technological developments, including artificial intelligence and predictive analytics, will not eliminate uncertainty. They may refine probability estimates and expand access to data, but they cannot remove contextual ambiguity, decisions shaped by professional and personal judgment, or the relational and ethical dimensions of care. In this context, the physician-patient relationship will likely depend even more on trust than on informational asymmetry. As access to medical information becomes increasingly widespread and algorithmically mediated, and often available at arm's reach, the core challenge will not be data availability, but the co-construction of decisions grounded in the best available evidence and in the explicit acknowledgment of uncertainty.

Educating for doubt is therefore not a concession to lack of knowledge or fragility, but a commitment to professional maturity. Competence in medicine does not consist in eradicating uncertainty, but in navigating it transparently, responsibly, and ethically. Intellectual humility strengthens professional authority and reinforces trust. In a culture that may equate expertise with certainty, medicine must resist the performance of infallibility. Doubt, when articulated, ethically integrated, and allowed to motivate continued learning, is not a weakness of practice but one of its essential conditions. ■



Ethical Disclosures

Conflicts of Interest: The authors have no conflicts of interest to declare.
 Financial Support: This work has not received any contribution grant or scholarship.

Provenance and Peer Review: Not commissioned; externally peer-reviewed.

Responsabilidades Éticas

Conflitos de Interesse: Os autores declaram a inexistência de conflitos de interesse.

Apoio Financeiro: Este trabalho não recebeu qualquer subsídio, bolsa ou financiamento.

Proveniência e Revisão por Pares: Não solicitado; revisão externa por pares.

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Corresponding Author/ Autor Correspondente:

Nadine Correia Santos - nsantos@med.uminho.pt
 Escola de Medicina da Universidade do Minho
 Campus de Gualtar, 4710-057 Braga, Portugal

Received / Recebido: 20/03/2026

Accepted / Aceite: 21/03/2026

Published Online / Publicado Online: 23/06/2026

Published / Publicado: 23/06/2026

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