

Teaching Ethical Judgment When the Curriculum Rewards Compliance: A Conceptual Model of Moral Uncertainty, Reason-Giving, and Institutional Accountability in Health Professions Education

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Abstract

Health professions education commonly treats ethics competence as something that can be secured through curricular coverage, professional standards, case analysis, and assessment of appropriate responses. These approaches are necessary, but they can also create an educational problem when learners discover that success depends more reliably on displaying the expected answer than on exposing uncertainty, articulating competing reasons, or questioning the institutional conditions under which decisions are made. This article develops a Mechanism-Based Educational Theory of ethical judgment development to explain why compliance-oriented environments may produce competent rule performance without necessarily cultivating the capacity for justified ethical judgment. The account distinguishes moral uncertainty from simple knowledge deficiency and treats reason-giving as an educational practice through which learners make judgments available for challenge, revision, and accountability. Ethical judgment is therefore conceptualized as developmental and relational: learners must recognize morally salient uncertainty, articulate and compare reasons, respond to criticism, revise conclusions when warranted, and understand how authority and responsibility are distributed across clinical and educational settings. The model further proposes that supervision, assessment, hidden curricula, hierarchy, and institutional reward structures can strengthen, interrupt, or reverse this development. Compliance is not rejected; some rules and constraints are ethically indispensable. The problem arises when observable conformity becomes a surrogate for judgment in situations where interpretation, contestability, and responsibility remain morally consequential. The resulting account provides a basis for designing curricula and assessment systems that preserve standards while making reasoned ethical judgment educationally visible.

Keywords: Health professions education, Bioethics education, Ethical judgment, Moral uncertainty, Reason-giving, Assessment

Introduction

Ethics education is now an established component of health professions curricula, and contemporary programs increasingly combine formal instruction with case discussion, professionalism teaching, reflective

activities, and clinically situated learning. Formal bioethics curricula can be designed, implemented, and evaluated as deliberate educational interventions [1]. Yet the existence of ethics teaching does not settle the more difficult educational question: what, precisely, has developed when a learner reliably produces an institutionally acceptable answer? Knowledge of rules, recognition of professional expectations, and competent performance in familiar scenarios may all be educational achievements. None, taken alone, demonstrates that a learner can make a justified judgment when duties conflict, consequences are uncertain, authoritative voices

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disagree, or the institution itself contributes to the ethical problem.

That distinction matters because professional development is neither theoretically neutral nor socially insulated. Professional identity formation interventions are built upon different assumptions about how learners become professionals, while professionalism itself is experienced through institutional norms, evaluative expectations, and unequal relations of power [2, 3]. Theory-informed syntheses of professional identity formation similarly show that development emerges through interaction among individual interpretation, social participation, institutional expectations, and broader professional cultures [4]. These literatures do not establish that professional identity formation and ethical judgment are equivalent. They do, however, make it difficult to defend an account of ethics competence as the simple internal acquisition of a stable set of correct rules. What learners come to regard as reasonable, speakable, risky, or professionally legitimate is partly shaped by the environments in which judgment is practiced.

A mechanism-based account is therefore needed. Work linking adaptive expertise with critically reflective practice shows why competent performance in novel or unstable situations cannot be reduced to routine application of familiar knowledge [5]. Theory-integrative scholarship on metacognitive reflection further distinguishes reflective processes that monitor, question, and revise thinking from the much broader category of “reflection” as an educational activity [6]. These distinctions are especially important in ethics education. A learner may know that several principles are relevant and still be uncertain about their relative weight; may identify an ethically troubling situation but remain unsure whether questioning a supervisor is permitted; or may articulate a defensible position yet modify it after encountering a neglected perspective. Ethical judgment develops through these transitions rather than through exposure to ethical content alone.

This article develops a Mechanism-Based Educational Theory of that process. Its central claim is conditional. Compliance becomes educationally problematic when institutional success depends on producing expected conduct or answers in circumstances where ethically relevant uncertainty, competing reasons, or contestable authority have not disappeared. Under those conditions, outward conformity can conceal whether learners can identify the source of disagreement, explain what makes one reason stronger than another, respond to criticism,

and revise a judgment without merely tracking authority. The argument does not oppose rules, standards, or professional constraint. Health professions education appropriately requires compliance with many safety, legal, and fiduciary obligations. The theoretical problem is narrower: when does compliance cease to be evidence of judgment and begin to substitute for it?

The limits of compliance-based ethics education

The first limit arises from the difference between the curriculum that is formally taught and the normative environment in which learners discover what is actually rewarded. Research on the hidden curriculum shows that residents and newly graduated physicians participate in transmitting expectations that are not fully captured by official curricular statements [7]. Work on moral injury within medical education likewise demonstrates that informal educational environments can carry ethically consequential expectations and that their burdens may not be distributed equally across learners [8]. These findings complicate the assumption that a formal ethics curriculum determines the operative ethics curriculum. Learners interpret not only what institutions say they value but also which questions attract approval, which disagreements appear costly, which forms of uncertainty are tolerated, and which performances reliably produce progression.

This distinction becomes sharper in competency-based environments when performance signals are heavily controlled. A recent theoretical analysis of competency-based medical education argues that externally regulated environments may generate superficial compliance when learners experience expectations primarily as requirements to satisfy rather than commitments they have meaningfully internalized [9]. The relevance to ethics education is not that competency standards are inherently incompatible with judgment. Standards can clarify minimum obligations and protect patients from arbitrary practice. The difficulty emerges when the assessment environment makes it rational for learners to optimize visible conformity while leaving the reasoning beneath it educationally opaque. A correct answer can then perform two functions simultaneously: it may represent genuine judgment, or it may represent successful recognition of what the evaluator wants.

The problem cannot be resolved by assuming that learners who notice ethical difficulty will necessarily be able to reason publicly about it. Medical students report moral distress in situations involving constraints

associated with other people, supervision, and wider systems [10]. Moral distress is not a measure of ethical competence, but it demonstrates an important separation between perceiving that something is wrong and possessing sufficient authority, permission, or practical opportunity to respond. Educationally, this means that moral recognition, reason articulation, and action should not be treated as interchangeable stages of one competence. A learner may perceive a conflict accurately but remain silent because the anticipated educational cost of challenge is high. Conversely, a learner may comply appropriately with a supervisor while possessing a sophisticated account of why the decision is ethically troubling. Observable behaviour alone does not disclose which process occurred.

Structured ethics activities can alter what becomes discussable. Clerkship-based approaches incorporating ethical reflection, feedback, and debriefing show that ethically salient experiences can be made explicit objects of educational work rather than remaining private reactions to clinical encounters [11]. Their significance for theory is not that reflective assignments are inherently superior to other methods. Rather, they demonstrate that curricula can create a sanctioned space in which reasons become visible and therefore open to response. Once a learner must explain why a course of action is justified, the educational object changes. The evaluator is no longer assessing only whether the learner selected an acceptable option; the evaluator can examine what the learner noticed, which considerations were excluded, how competing reasons were weighted, and whether the judgment changes in response to criticism.

Whether such reason-giving is genuinely available depends partly on context. A mixed-methods study of professional identity formation in a hierarchical and collectivist educational culture found that contextual and

relational conditions shaped learners' professional development [12]. Critical work with Black/African American physicians has likewise shown how dominant narratives of professional formation may incompletely represent the experiences through which minoritized professionals construct identity [13]. These findings caution against treating willingness to question, disclose uncertainty, or contest authority as culturally and socially neutral indicators of ethical maturity. Silence may sometimes reflect deference, role interpretation, perceived risk, or previous experience with institutional response rather than absence of ethical reasoning. A curriculum that rewards verbal challenge without examining who can safely challenge whom may merely substitute one behavioural proxy for another.

The relevant distinction is therefore not between compliance and noncompliance. It is between justified constraint and compliance as a surrogate for judgment. Justified constraint occurs when a learner follows a rule, instruction, or professional requirement whose authority remains ethically defensible in the circumstances. Compliance becomes an educationally weak surrogate when conformity is taken as sufficient evidence of ethical competence even though the case still contains contestable reasons, unresolved value conflict, or uncertainty about the distribution of responsibility. Under those conditions, assessment may certify the observable endpoint while leaving the reasoning process unexamined.

The interaction among formal requirements, hidden signals, authority, and opportunities for explanation creates several recurring educational configurations. Their importance lies in what each configuration makes available for judgment development, not simply whether learners ultimately comply.

Table 1 summarizes the distinctions discussed above.

Table 1. Educational signal configurations through which compliance can either support or obscure ethical judgment development

Educational signal configuration	What the environment visibly rewards	Likely learner inference about successful performance	Treatment of moral uncertainty	Opportunity for reason-giving	Proposed developmental implication
Rule-accuracy dominance	Reproduction of the expected rule or answer	Correctness is demonstrated by matching the authorized response	Uncertainty is treated mainly as a deficit to eliminate	Limited unless reasons are separately elicited	Rule knowledge may strengthen while justificatory reasoning remains difficult to observe

Hidden-norm alignment	Behaviour consistent with informal team expectations	Professional safety depends on reading local norms accurately	Uncertainty may be concealed if disclosure carries social cost	Dependent on local permission and trust	Learners may become skilled at situational conformity without developing confidence in contestable reasoning
High-stakes professionalism surveillance	Avoidance of conduct interpreted as unprofessional	Visible deviation is riskier than explaining disagreement	Ambiguity may be converted into defensive certainty	Restricted when disagreement itself appears evaluatively dangerous	Ethical reasoning can become strategically compressed into institutionally acceptable language
Hierarchy-conditioned voice	Deference to positional authority	Good performance includes knowing when not to challenge	Uncertainty may persist privately while disappearing from public discussion	Unequal across roles, identities, and settings	Moral recognition may develop without corresponding practice in articulating or defending reasons
Supervised ethical inquiry	Explicit identification and analysis of ethically salient difficulty	Thoughtful uncertainty and justified revision are legitimate	Uncertainty is treated as material for inquiry	Deliberately elicited and responded to	Learners can practice exposing reasons to criticism while remaining accountable to standards
Reflective debriefing linked to action	Explanation of what was noticed, decided, omitted, and learned	Ethical performance includes examining the reasoning behind action	Uncertainty can be revisited after the immediate event	Structured through feedback and retrospective analysis	Experience can contribute to judgment development when reflection changes how future reasons are recognized and evaluated

These configurations are not mutually exclusive. A single clinical placement may combine clear non-negotiable standards with informal pressure to remain silent, while another may require strict procedural compliance yet invite extensive discussion about why the procedure is justified. The central theoretical variable is therefore not the quantity of rules in the curriculum. It is whether the educational system permits learners to expose the reasoning that connects rules, circumstances, competing values, authority, and action. Where that connection remains invisible, compliance can be assessed more readily than judgment.

Moral uncertainty and reason-giving

Ethical judgment becomes most visible when the appropriate response cannot be obtained by straightforward retrieval of a settled rule. Research on uncertainty in medical education shows that learners encounter multiple forms of uncertainty during clinical training rather than a single homogeneous experience [14]. A scoping review of efforts to improve uncertainty tolerance similarly found heterogeneous educational targets and approaches [15]. These literatures concern uncertainty more broadly than moral uncertainty, so they cannot be imported without qualification. Their contribution is narrower but important: uncertainty is a

recurring condition of professional learning, and educational responses to it depend on what kind of uncertainty is present and how the environment frames its meaning.

For ethics education, moral uncertainty can be understood as uncertainty about what ought to be done, which considerations are ethically decisive, how competing obligations should be weighted, or whether the apparent authority governing a decision is itself justified. This differs from simply lacking clinical information. Additional facts may narrow some ethical disagreements, but they do not automatically resolve conflicts among autonomy, beneficence, fairness, professional obligation, family involvement, institutional policy, or competing accounts of responsibility. Treating moral uncertainty as a defect to be eliminated too quickly can therefore create a predictable educational response: learners search for the answer that restores certainty rather than examining why reasonable disagreement remains possible.

Educational work on uncertainty tolerance indicates that productive engagement requires more than asking learners to endure ambiguity. Evidence-informed guidance emphasizes the interaction of learner capacities, educator behaviour, and institutional conditions in shaping responses to uncertainty [16]. A grounded-

theory study of simulation learning also identified processes including cognitive restructuring and collaboration as learners worked through uncertainty [17]. Although neither source directly establishes a mechanism of ethical judgment, together they support an educational principle central to the present theory: uncertainty becomes developable when learners can work on it socially and interpretively rather than merely experience it.

Reason-giving is the mechanism through which that work becomes visible. To give a reason is not simply to state an opinion or attach an ethical principle to a preferred answer. It is to make a judgment answerable to questions about relevance, consistency, omitted considerations, competing interpretations, and possible revision. A learner who says that patient autonomy “applies” has not yet shown how the patient’s preferences were interpreted, whether decisional authority is contested, what competing obligations exist, or why the proposed action follows. Reason-giving exposes these inferential steps. Once exposed, they can be questioned by supervisors, peers, patients, or other members of the clinical team.

This process also explains why emotionally difficult experience is neither sufficient nor irrelevant. Reflective-writing research shows that learners can transform experiences of vulnerability into material for professional meaning-making [18]. Studies of emotionally challenging situations similarly indicate that affectively difficult experiences interact with professional identity formation [19]. The implication is not that distress, vulnerability, or uncertainty should be deliberately maximized. Difficulty becomes educationally meaningful only when learners have adequate support to interpret what occurred and when reflection can alter subsequent understanding. Without those conditions, the same experience may produce avoidance, defensive certainty, withdrawal, or simple accommodation to local norms.

Reason-giving therefore performs three educational functions. First, it makes uncertainty articulable: learners must identify what is unresolved rather than merely reporting discomfort. Second, it makes judgment contestable: reasons can be examined by others rather than remaining private convictions. Third, it makes learning revisable: a judgment can change without revision being treated as failure or inconsistency. These functions distinguish judgment development from the acquisition of fixed answers. They also create a

demanding role for supervision. A supervisor who consistently resolves uncertainty by supplying the correct answer may produce short-term clarity while reducing opportunities to observe how the learner weighs reasons. A supervisor who refuses guidance altogether may leave novices without the knowledge or scaffolding necessary for responsible judgment. The educational task is to regulate assistance so that standards remain operative while learners increasingly become responsible for explaining and revising their own reasoning.

The relationship is reciprocal. Learners infer from supervisory responses whether uncertainty is safe to disclose; supervisors infer from learner explanations how much autonomy can responsibly be granted. Repeated interactions can therefore produce contrasting developmental environments. Where questions are treated as evidence of weakness, learners may learn to conceal uncertainty before they have learned to resolve it. Where every position is treated as equally acceptable, reason-giving loses its evaluative force because no judgment must withstand criticism. Ethical judgment develops in the narrower space between these extremes: uncertainty can be acknowledged, reasons must be offered, criticism can change the conclusion, and institutional authority remains itself available for ethical examination when the circumstances warrant it.

A conceptual model of ethical judgment development

Ethical judgment development can now be specified as a change in how learners encounter morally significant situations, make reasons public, respond to criticism, and assume responsibility for a defensible decision. This development cannot be represented adequately as accumulation of ethical facts or progressive independence from supervision. Studies of transformational learning in competency-based postgraduate education show that professional development can involve reinterpretation of experience rather than simple addition of competencies [20]. Evidence-informed approaches to professional identity formation similarly emphasize intentional pedagogical conditions, longitudinality, social interaction, and opportunities for reflection [21]. These findings support a developmental account in which ethical learning depends on what learners are repeatedly permitted and required to do with uncertainty.

The central mechanism is an iterative relation among uncertainty recognition, reason articulation, critical response, and warranted revision. Each component

changes the educational meaning of the others. Uncertainty recognition identifies a situation in which routine application does not settle what ought to be done. Reason articulation makes the learner's interpretation inspectable. Critical response exposes neglected considerations, weak inferences, competing duties, or inappropriate reliance on authority. Warranted revision then distinguishes responsiveness to better reasons from simple submission to a more powerful speaker. Recent theoretical work on metacognitive reflection similarly treats reflection as a dynamic praxis involving inquiry and adaptive action rather than a discrete episode of introspection [22]. For ethics education, the distinctive addition is that revision must remain answerable to reasons: changing one's judgment counts as development when the change can itself be justified.

This mechanism also clarifies why ethical judgment should not be inferred from movement on adjacent constructs. Longitudinal research indicates that professional identity formation can change over time without professionalism, leadership, and resilience measures necessarily following identical trajectories [23]. Ethical judgment should likewise be treated as a theoretically distinct developmental object. A learner may become more confident without becoming more ethically discriminating; may become more professionally socialized while becoming less willing to disclose disagreement; or may become more fluent in ethical terminology while relying increasingly on institutionally expected formulations. Development therefore requires evidence about the quality and revisability of reasoning, not merely the accumulation of associated professional attributes.

Continuity and social participation matter because learners acquire the practical meaning of professional standards through recurring relationships. Longitudinal qualitative research on clinical participation demonstrates that identity construction develops through sustained engagement with people, roles, and clinical environments [24]. Educational work on professional identity formation has also shown how explicit developmental language can organize expectations, feedback, and standards [25]. Applied to ethics education, these findings imply that supervisory responses become part of the mechanism. When supervisors ask learners to explain what made a situation ethically difficult, identify the strongest competing

reason, and state what would change their conclusion, they make judgment visible as a revisable practice. When supervisors respond only with the expected answer, they may reduce immediate ambiguity while also removing information about how the learner was reasoning.

The resulting account is therefore multilevel. At the learner level, judgment depends on recognition, articulation, comparison, and revision of reasons. At the supervisory level, feedback determines which reasoning practices receive attention and which uncertainties become safe to disclose. At the assessment level, criteria signal whether educational success depends primarily on conformity, defensibility, responsiveness to criticism, or some combination of these. At the institutional level, policies, hierarchy, workload, cultural norms, and accountability arrangements determine whether reason-giving can influence action or remains an educational exercise without practical consequence.

These levels interact recursively rather than sequentially. Learners who experience questioning as professionally dangerous may disclose less uncertainty; supervisors receiving fewer questions may infer that learners require little ethical discussion; assessment systems may then record competent performance while remaining insensitive to concealed uncertainty. The reverse configuration is also possible. Repeatedly eliciting reasons can give supervisors better evidence about learners' judgment, allowing feedback and responsibility to become more appropriately calibrated. Over time, these practices may influence local expectations about what constitutes credible professional behaviour. The mechanism can therefore strengthen, stall, or reverse depending on how its levels reinforce one another.

The theory does not imply that every ethical decision must remain open indefinitely. Novices sometimes need directive instruction. Patient-safety rules and legal duties can make some options unavailable. Time-critical care may sharply restrict deliberation. These conditions qualify rather than invalidate the account. The key question is whether closure is justified by the ethical and practical demands of the situation or produced primarily because the educational environment rewards premature certainty. **Figure 1** represents these reciprocal relationships while preserving the distinction between evidence-supported educational processes and the integrative relationships proposed here.

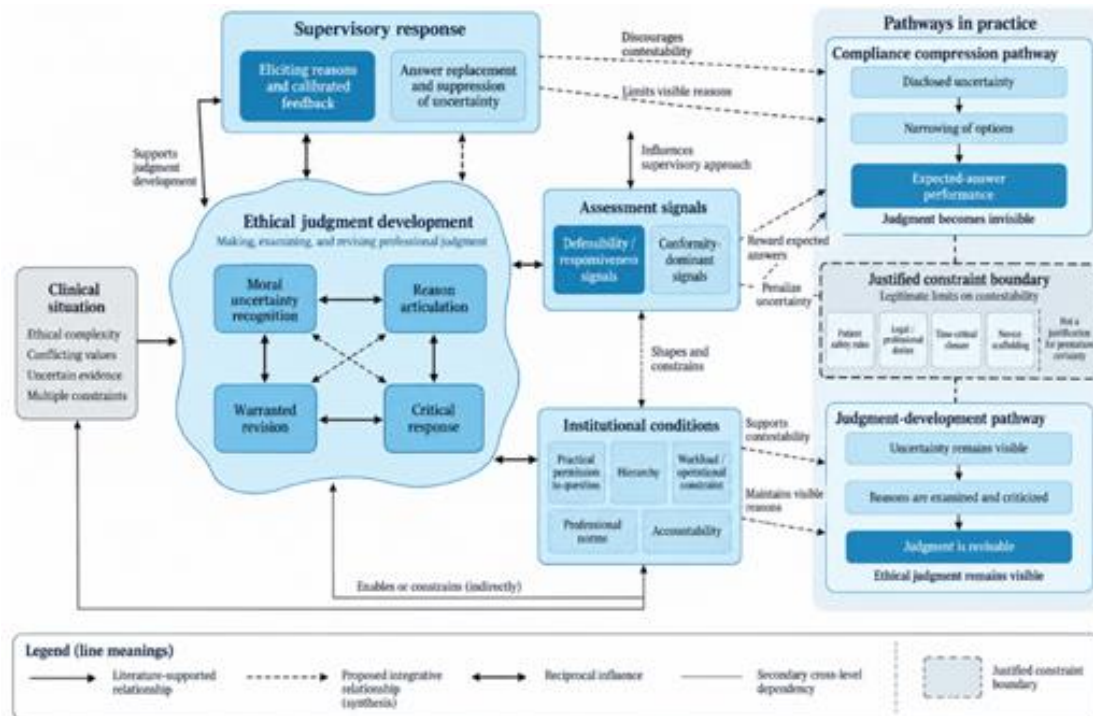


Figure 1. When ethical judgment becomes visible—or disappears behind successful compliance

Curriculum and assessment implications

The theory changes what curricula should make observable. If ethical judgment includes the capacity to identify uncertainty, articulate reasons, respond to criticism, and revise appropriately, then assessment cannot rely on a single representation of competence. Analysis of medical ethics and law assessment has emphasized that no single assessment method adequately captures all relevant educational outcomes [26]. A recent scoping review of professionalism assessment similarly found substantial heterogeneity in definitions and assessment approaches, while broader assessment scholarship has argued for system-level approaches that integrate multiple judgments over time [27, 28]. These findings support assessment pluralism, but pluralism should be purposeful. Different methods should expose different components of judgment rather than merely multiply scores.

Written examinations may establish whether learners recognize relevant principles, rules, or legal duties. Structured cases can examine how learners discriminate among plausible alternatives. Oral or written justifications can reveal which reasons they treat as decisive and what evidence would alter that judgment.

Longitudinal supervisory observations can show whether reason-giving survives clinical pressure, hierarchy, and changing contexts. Reflective work can examine retrospective reinterpretation, provided it is assessed for the quality of inquiry rather than the performance of introspection. No single format should be treated as a complete representation of ethical competence.

Structured judgment measures can nevertheless contribute useful information. A cohort study examining situational judgement testing found associations between performance and later professionalism lapses at some stages of medical training [29]. Such findings justify interest in structured judgment measures while also illustrating the danger of proxy capture. A score may provide a meaningful signal without becoming the construct itself. In the present account, an assessment system becomes educationally weak when learners can succeed through pattern recognition of the institutionally preferred answer while the reasons underlying the choice remain inaccessible.

A mechanism-based assessment design would therefore ask what educational process each task activates and what inference the resulting performance permits. **Table 2** translates this distinction into assessment terms.

Table 2. Assessment functions for making ethical judgment development observable without collapsing it into a single score

Assessment function	Educational process made visible	Evidence sought from the learner	What competent performance can support	What it cannot establish alone	Required feedback response
Recognition of moral salience	Detection of ethically consequential uncertainty	Identification of the value conflict, affected parties, authority issue, or unresolved obligation	Learner notices that routine action does not exhaust the problem	Ability to resolve the conflict	Clarify missed or misidentified dimensions
Reason articulation	Translation of judgment into inspectable justification	Explicit reasons, priorities, assumptions, and excluded alternatives	Learner can explain why a conclusion follows	That the conclusion will survive criticism	Probe relevance, consistency, and omitted considerations
Counter-reason engagement	Exposure of reasoning to competing perspectives	Response to a credible objection or alternative interpretation	Learner can compare reasons rather than merely repeat a position	Willingness to revise when revision is warranted	Introduce proportionate challenge rather than supply the answer
Warranted revision	Modification of judgment after better reasons emerge	Explanation of what changed and why	Learner distinguishes principled revision from strategic conformity	Stable performance across contexts	Reinforce justified change without rewarding capitulation to authority
Situated performance	Application under clinical, relational, and institutional constraints	Observable action plus contemporaneous or retrospective justification	Learner can connect judgment to action in context	Complete access to private reasoning or future behaviour	Separate action quality from the reasoning evidence available
Longitudinal developmental interpretation	Pattern across repeated encounters	Changes in reasoning quality, responsiveness, and independence over time	Developmental trajectory can be judged across contexts	A universal linear maturity sequence	Calibrate supervision and responsibility to demonstrated reasoning

The table implies a change in assessment philosophy. The purpose of eliciting reasons is not to reward verbal sophistication or turn every clinical encounter into philosophical debate. It is to prevent a convenient endpoint—correct behaviour—from carrying more evidentiary weight than it can support. Assessment should therefore distinguish between a learner who reaches the expected conclusion through defensible reasoning, one who reaches it through unexamined deference, and one whose justified reasoning appropriately challenges an initial expectation.

Institutional accountability becomes unavoidable once assessment is understood as a mechanism rather than a neutral measurement process. Critical examination of learning analytics in medical education shows that educational data systems themselves generate ethical questions about interpretation, governance, consequences, and power [30]. Similar concerns arise whenever assessment determines progression,

remediation, access to clinical responsibility, or reputational judgments. Institutions that ask learners to expose uncertainty and reasoning assume corresponding obligations: to define how such disclosures will be interpreted, protect legitimate disagreement from punitive misclassification, train supervisors to distinguish uncertainty from incompetence, and ensure that assessment records do not convert exploratory reasoning into durable evidence of deficiency.

The educational aim is therefore neither maximal openness nor maximal standardization. Curricula should create repeated opportunities in which learners recognize morally salient uncertainty, offer reasons, encounter credible counter-reasons, receive calibrated guidance, and revise when warranted. **Figure 2** represents how these opportunities can accumulate into developmental feedback or be interrupted by assessment and institutional signals.

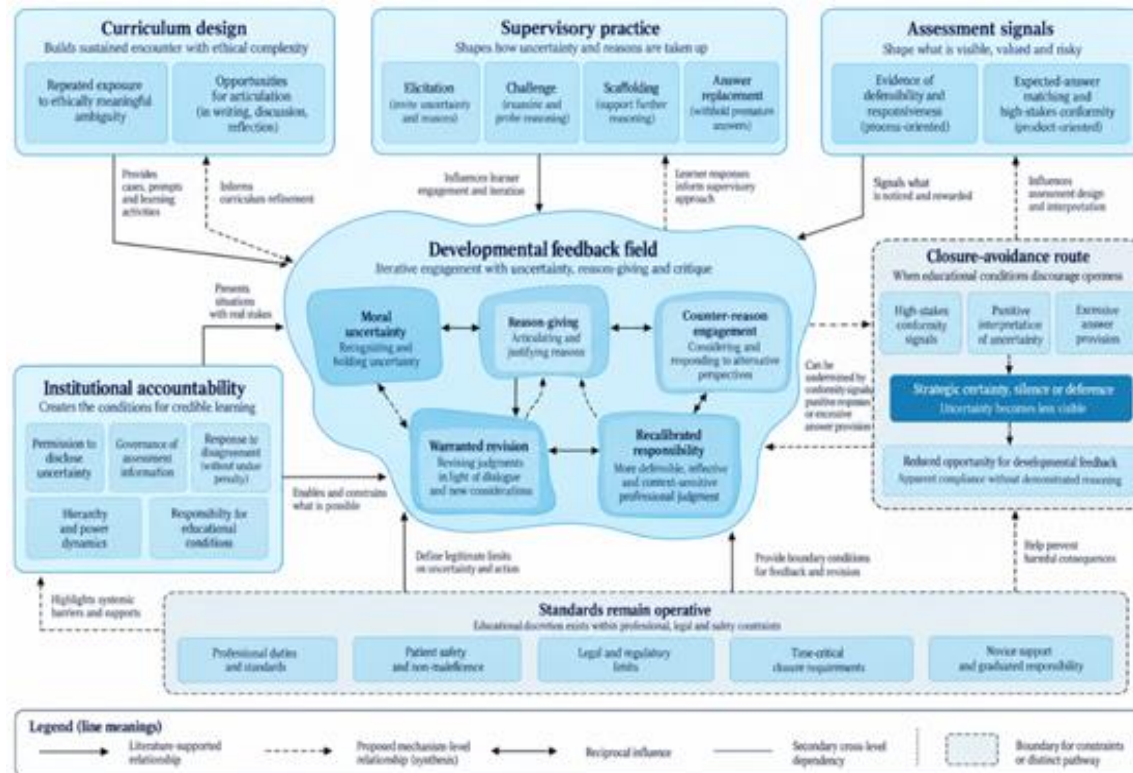


Figure 2. The educational conditions that turn uncertainty and reason-giving into developmental feedback

Results and Discussion

The theory developed here treats ethical judgment as an educational achievement that becomes visible through the quality of learners' engagement with uncertainty and reasons. Its most important implication is that familiar educational activities cannot be assumed to work through a single mechanism. Reflection provides a useful example. A large cross-sectional study found that reflective practice was associated with professional identity formation whereas self-reflection and insight were not [31]. The finding does not establish causation, and professional identity is not ethical judgment. It nevertheless reinforces the conceptual point that "reflection" is too broad a label to explain development. What matters is what learners actually do: revisit action, expose assumptions, compare reasons, integrate feedback, or simply engage in private introspection. The same distinction applies to curriculum reform. Educational designs do not operate independently of the organizations implementing them. Qualitative research on adoption of concept-based curricula has shown the importance of compatibility, change champions, social systems, and implementation conditions [32]. A

curriculum that formally invites moral uncertainty while progression systems reward certainty can therefore contain an internal contradiction. Likewise, a course that teaches reason-giving but places learners in clinical environments where disagreement is routinely penalized may increase conceptual vocabulary without increasing practical contestability. Institutional accountability is consequently constitutive of the educational mechanism rather than an administrative condition external to it. Several rival explanations must remain viable. Learners may comply because they recognize a justified rule rather than because they fear evaluation. Novices may request or require directive supervision because they lack relevant clinical knowledge, not because the curriculum has suppressed agency. Rapid closure may be ethically appropriate in time-critical care. Cultural expectations surrounding authority, family, collegiality, and professional role may alter how reason-giving should be expressed without eliminating ethical deliberation. Assessment standardization can also protect learners from arbitrary evaluation and patients from unacceptable variation. The theory would therefore be weakened if every instance of deference, certainty, or standardization were interpreted as evidence of failed ethical education.

Its stronger and more discriminating claim is narrower: educational systems should not infer ethical judgment from compliance when the underlying situation still requires interpretation, justification, or contestable allocation of responsibility. That claim produces testable distinctions. Learners who receive repeated opportunities for reason-giving should become better able to state what would change their conclusion, identify relevant counter-reasons, and distinguish justified revision from deference. Supervisors should become better able to differentiate knowledge deficits from genuine normative disagreement. Assessment systems designed around these distinctions should generate richer evidence about judgment than systems that record only the selected answer. Whether these predicted differences occur, and under which cultural and institutional conditions, remains an empirical question.

The account also has an equity implication. Educational permission to express uncertainty cannot be assumed to be distributed evenly. Learners positioned differently within professional hierarchies may face different reputational or interpersonal costs for challenging assumptions. An assessment system that rewards visible contestation without accounting for those asymmetries could reproduce the same proxy problem it is intended to solve. Reason-giving therefore requires institutional arrangements that make disagreement interpretable and appropriately safe while retaining accountability for the quality of reasons offered.

Finally, development should not be conceptualized as an irreversible progression toward autonomous moral expertise. Learners can become more cautious, more deferential, or more strategically compliant as stakes increase. Institutions can improve formal ethics teaching while simultaneously narrowing opportunities for practical disagreement. Supervisory environments can change across rotations. Ethical judgment development is therefore better understood as a contingent capability sustained by recurrent opportunities to reason, receive criticism, revise, and act within defensible constraints.

Conclusion

Health professions education cannot assume that learners who reliably produce acceptable answers have necessarily developed ethical judgment. Compliance is often appropriate and sometimes obligatory, but it becomes an inadequate educational proxy when morally relevant uncertainty, competing reasons, or contestable

authority remain unresolved. Ethical judgment develops when learners can recognize such uncertainty, articulate and compare reasons, expose those reasons to criticism, revise conclusions when warranted, and connect judgment to responsibility in practice. These capacities depend not only on individual learning but also on supervision, assessment, and institutional conditions that determine whether uncertainty and disagreement can be expressed without being mistaken automatically for incompetence.

The resulting account is deliberately conditional. Standards, rules, and directive supervision remain necessary where safety, law, professional duty, or novice learning justify them. The educational failure arises when institutions close reasoning before those justifications have done the work. A curriculum that seeks ethical judgment must therefore assess more than whether learners reach the expected endpoint; it must make the quality, contestability, and revisability of the reasoning that produced that endpoint educationally visible.

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References

1. Allana AA, Ali SK, Ghias K. Bioethics curriculum for undergraduate medical students: An evaluation study utilizing mixed methods approach. *BMC Med Educ.* 2024;24(1):385. doi:10.1186/s12909-024-05376-4
2. Mount GR, Kahlke R, Melton J, Varpio L. A critical review of professional identity formation interventions in medical education. *Acad Med.* 2022;97(11S). doi:10.1097/ACM.0000000000004904
3. Maristany D, Hauer KE, Leep Hunderfund AN, Elks ML, Bullock JL, Kumbamu A, et al. The problem and power of professionalism: A critical analysis of medical students' and residents' perspectives and experiences of professionalism. *Acad Med.* 2023;98(11S). doi:10.1097/ACM.0000000000005367

4. Sarraf-Yazdi S, Pisupati A, Goh CK, Ong YT, Toh YR, Goh SPL, et al. A scoping review and theory-informed conceptual model of professional identity formation in medical education. *Med Educ.* 2024;58(10):1151-65. doi:10.1111/medu.15399
5. Ng SL, Forsey J, Boyd VA, Friesen F, Langlois S, Ladonna K, et al. Combining adaptive expertise and (critically) reflective practice to support the development of knowledge, skill, and society. *Adv Health Sci Educ Theory Pract.* 2022;27(5):1265-81. doi:10.1007/s10459-022-10178-8
6. Merkebu J, Veen M, Hosseini S, Varpio L. The case for metacognitive reflection: A theory integrative review with implications for medical education. *Adv Health Sci Educ Theory Pract.* 2024;29(4):1481-500. doi:10.1007/s10459-023-10310-2
7. MacNeil KA, Regehr G, Holmes CL. Contributing to the hidden curriculum: Exploring the role of residents and newly graduated physicians. *Adv Health Sci Educ Theory Pract.* 2022;27(1):201-13. doi:10.1007/s10459-021-10081-8
8. Nemiroff S, Blanco I, Burton W, Fishman A, Joo P, Mehooli M, et al. Moral injury and the hidden curriculum in medical school: Comparing the experiences of students underrepresented in medicine (URMs) and non-URMs. *Adv Health Sci Educ Theory Pract.* 2024;29(2):371-87. doi:10.1007/s10459-023-10259-2
9. Neufeld A, Smith R, Guldner G. From compliance to commitment: Supporting autonomous growth in competency-based medical education. *Acad Med.* 2026;101(4):375-80. doi:10.1093/acamed/wvaf090
10. Reczek AD, Kim DT, DiBrito S, Shelton W. Medical student moral distress in the clinical learning environment: Identifying the sources and pedagogical implications. *Med Teach.* 2026;48(7):1239-48. doi:10.1080/0142159X.2026.2614603
11. Landa-Galindez A, Armas ML, Coronel-Couto G. Developing culturally competent physicians: Empathy, inclusivity, moral distress training and ethical reflections during the Medicine Clerkship. *Med Teach.* 2025;47(5):835-41. doi:10.1080/0142159X.2024.2374943
12. Findyartini A, Greviana N, Felaza E, Faruqi M, Afifah TZ, Firdausy MA. Professional identity formation of medical students: A mixed-methods study in a hierarchical and collectivist culture. *BMC Med Educ.* 2022;22(1):443. doi:10.1186/s12909-022-03393-9
13. Wyatt TR, Rockich-Winston N, White D, Taylor TR. "Changing the narrative": A study on professional identity formation among Black/African American physicians in the U.S. *Adv Health Sci Educ Theory Pract.* 2021;26(1):183-98. doi:10.1007/s10459-020-09978-7
14. Stephens GC, Sarkar M, Lazarus MD. 'A whole lot of uncertainty': A qualitative study exploring clinical medical students' experiences of uncertainty stimuli. *Med Educ.* 2022;56(7):736-46. doi:10.1111/medu.14743
15. Patel P, Hancock J, Rogers M, Pollard SR. Improving uncertainty tolerance in medical students: A scoping review. *Med Educ.* 2022;56(12):1163-73. doi:10.1111/medu.14873
16. Stephens GC, Lazarus MD. Twelve tips for developing healthcare learners' uncertainty tolerance. *Med Teach.* 2024;46(8):1035-43. doi:10.1080/0142159X.2024.2307500
17. Cole R, Bowling C, Ren X, Vojta L. Simulation-based education's impact on medical students' tolerance of uncertainty: A grounded theory study. *Med Teach.* 2025;47(9):1478-82. doi:10.1080/0142159X.2024.2438787
18. Valestrand EA, Kvernenes M, Kinsella EA, Hunskaar S, Schei E. Transforming self-experienced vulnerability into professional strength: A dialogical narrative analysis of medical students' reflective writing. *Adv Health Sci Educ Theory Pract.* 2024;29(5):1593-610. doi:10.1007/s10459-024-10317-3
19. Lönn A, Weurlander M, Seeberger A, Hult H, Thornberg R, Wernerson A. The impact of emotionally challenging situations on medical students' professional identity formation. *Adv Health Sci Educ Theory Pract.* 2023;28(5):1557-78. doi:10.1007/s10459-023-10229-8
20. Chow J, Al-Duaij L, Last N, Sheth U, Rehman M, Azim A, et al. Transformational learning and professional identity formation in postgraduate competency-based medical education. *Med Educ.* 2025;59(4):409-17. doi:10.1111/medu.15553
21. Fleer J, Smit MJ, Boer HJ, Knevel M, Velthuis F, Trippenzee M, et al. An evidence-informed pedagogical approach to support professional identity formation in medical students: AMEE

- Guide No. 171. *Med Teach*. 2025;47(4):580-8. doi:10.1080/0142159X.2024.2387809
22. Merkebu J, Mennin S. Towards a praxis of metacognitive reflection in medical education: A framework of inquiry, adaptive action, and pattern logic. *Adv Health Sci Educ Theory Pract*. 2026;31(3):989-1002. doi:10.1007/s10459-025-10469-w
 23. Nsimbe D, Hickey A, Harkin DW, Bensaoud A, Ryan Á, Doyle F. Professional identity formation, professionalism, leadership and resilience: A longitudinal assessment in medical students. *BMC Med Educ*. 2026;26(1):880. doi:10.1186/s12909-026-09152-4
 24. Brown MEL, Ard C, Adams J, O'Regan A, Finn GM. Medical student identity construction within longitudinal integrated clerkships: An international, longitudinal qualitative study. *Acad Med*. 2022;97(9):1385-92. doi:10.1097/ACM.0000000000004732
 25. Kågedal K, Jalakas T, Öberg E, Alvunger AK, Thörne K, Barnhoorn PC, et al. Cornerstones of professional identity formation: Developing a language to express requirements, provide feedback, and establish standards in medical education. *Med Teach*. 2026;48(8):1310-2. doi:10.1080/0142159X.2025.2550479
 26. Moorlock G, Deans Z, Trimble M. Assessing ethics and law in medical schools: There is no single best answer. *J Med Ethics*. 2025;51(10):684-8. doi:10.1136/jme-2024-110298
 27. Jaramillo Villegas C, Hernandez Rincon EH, Gallego Beltran JC, Rossini Guzman Y. Assessment of professionalism in undergraduate and graduate medical education: A scoping review. *BMC Med Educ*. 2025;25(1):1295. doi:10.1186/s12909-025-07756-w
 28. Holmboe ES, Osman NY, Murphy CM, Kogan JR. The urgency of now: Rethinking and improving assessment practices in medical education programs. *Acad Med*. 2023;98(8S). doi:10.1097/ACM.0000000000005251
 29. Sahota G, Tiffin PA, Smith D, Tyrrell E, Hampshire M, Taggar J. Situational judgement testing at different stages of undergraduate medical training and the risk of professionalism lapses: A cohort study. *Med Educ*. 2026;60(3):296-306. doi:10.1111/medu.70020
 30. Marcotte K, Yang P, Millis MA, Vercler CJ, Sebok-Syer SS, Krumm AE, et al. Ethical considerations of using learning analytics in medical education: A critical review. *Adv Health Sci Educ Theory Pract*. 2025;30(1):87-101. doi:10.1007/s10459-024-10402-7
 31. Demak IPK, Androni A, Arifuddin A, Meity N, Prins J, de Carvalho-Filho MA, et al. Not all reflection is equal: Reflective practice, not self-reflection, correlates with Indonesian medical students' professional identity formation. *Med Educ*. 2026;60(9):976-86. doi:10.1111/medu.70176
 32. Tweedie J, Pelly F, Wright H, Palermo C. Exploring the adoption of concept-based curricula: Insights from educators and implications for change. *Adv Health Sci Educ Theory Pract*. 2025;30(1):223-37. doi:10.1007/s10459-024-10346-y