

# FROM MEMORIZING LAWS TO MORAL REASONING: EXPLORING SELF-REGULATED LEARNING IN MEDICAL LAW AND ETHICS

DA MEMORIZAÇÃO DE LEIS AO RACIOCÍNIO MORAL: EXPLORANDO A  
APRENDIZAGEM AUTORREGULADA NO DIREITO E NA ÉTICA MÉDICA

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## Abstract

This qualitative study explored how medical students develop self-regulated learning (SRL) strategies when engaging with medical law and ethics, a domain where cognition, reflection, and emotion intersect. Thirteen undergraduate medical students participated in semi-structured interviews analyzed thematically using Braun and Clarke's framework. The findings revealed four interconnected themes: learning through moral curiosity, structuring chaos into clarity, balancing emotion and reason, and transforming learning into professional purpose. Students initially approached the subject as a memorization task but gradually reframed it as an ethical inquiry that shaped their identity as future physicians. Through planning, reflection, and emotional regulation, they learned to navigate moral uncertainty and align personal values with professional expectations. The study extends SRL theory beyond cognitive control, showing that in moral-legal education, self-regulation becomes a form of ethical practice. Integrating reflective SRL activities into ethics curricula can foster moral reasoning, emotional resilience, and professional integrity among medical students.

**Keywords:** Self-Regulated Learning. Medical Education. Medical Law. Ethics. Professional Identity. Moral Reasoning.

## Resumo

*Este estudo qualitativo explorou como estudantes de medicina desenvolvem estratégias de aprendizagem autorregulada (AA) ao se envolverem com o direito e a ética médica, um domínio onde cognição, reflexão e emoção se interconectam. Treze estudantes de medicina da graduação participaram de entrevistas semiestruturadas, analisadas tematicamente utilizando a estrutura de Braun e Clarke. Os resultados revelaram quatro temas interconectados: aprender por meio da curiosidade moral, estruturar o caos em clareza, equilibrar emoção e razão e transformar a aprendizagem em propósito profissional. Inicialmente, os estudantes abordaram o assunto como uma tarefa de memorização, mas gradualmente o reformularam como uma investigação ética que moldou sua identidade como futuros médicos. Por meio do planejamento, da reflexão e da regulação emocional, eles aprenderam a lidar com a incerteza moral e a alinhar valores pessoais com expectativas profissionais. O estudo amplia a teoria da AA além do controle cognitivo, mostrando que, na educação moral e jurídica, a autorregulação se torna uma forma de prática ética. A integração de atividades reflexivas de AA nos currículos de ética pode promover o raciocínio moral, a resiliência emocional e a integridade profissional entre os estudantes de medicina.*

**Palavras-chave:** Aprendizagem Autorregulada. Educação Médica. Direito Médico. Ética. Identidade Profissional. Raciocínio Moral.



## 1 INTRODUCTION

Medical education has expanded beyond clinical skills to encompass ethical literacy and professional accountability. This shift recognizes that competent physicians must not only diagnose and treat but also justify their actions within moral and legal frameworks. As curricula evolve, medical law and ethics have become central to professional formation, requiring students to engage with issues such as consent, confidentiality, and negligence as part of their developing identity. Hays (2013) argued that genuine integration occurs when learners connect scientific and humanistic understanding rather than treating them as separate domains. In this way, ethics and law teaching become arenas for practicing professional judgment. Wilson, Cowin, Johnson, and Young (2013) noted that building a professional identity demands both knowledge and pedagogical guidance to help students reconcile personal values with institutional norms. Rahimzadeh et al. (2023) further highlighted the global need to modernize ethics education to address new dilemmas in data sharing, artificial intelligence, and end-of-life care. Collectively, these developments affirm that learning ethics and law is integral—not peripheral—to preparing responsible physicians.

Given this broader mandate, it is essential to understand how medical students learn in morally and legally complex environments. Unlike factual knowledge, ethical and legal reasoning require navigating ambiguity, balancing competing values, and self-assessing one's thinking. Zimmerman (1986) described this as *self-regulation*—a process of planning, monitoring, and reflecting to achieve mastery. His model positions students as active agents in their learning, a concept well suited to the reflective demands of ethics education. Zimmerman and Moylan (2009) later integrated motivation and metacognition into this framework, emphasizing that learners must regulate not only cognition but also emotion and effort. Panadero and Alonso-Tapia (2014) showed that effective learners continually cycle through forethought, performance, and reflection. In moral–legal learning, this means questioning one's reasoning and revising assumptions to internalize principles. Sandars and Cleary (2011) extended SRL to medical training, suggesting it underpins lifelong competence as doctors learn from feedback and uncertainty. More recently, Cecilio-Fernandes et al. (2024) demonstrated that structured feedback can enhance students' self-regulatory behaviors, confirming that SRL is both teachable and

measurable. These insights show that understanding ethics requires not only knowing rules but regulating thought and emotion when rules alone are insufficient.

Despite this theoretical progress, empirical research on SRL in moral and legal learning remains limited. Most existing studies focus on scientific reasoning or procedural mastery. Artino, La Rochelle, and Durning (2010) found that motivation and self-regulation predict stronger academic performance, while Lucieer et al. (2016) linked SRL behaviors—planning and strategy use—to higher achievement in preclinical modules. Cho, Marjadi, Langendyk, and Hu (2017) similarly reported that SRL helps students adapt to complex clinical environments. Yet, how these skills function in ethics and law courses is still unclear. Foong, Nazri, and Holder (2018) showed that students often struggle to align internal motivation with external expectations—an issue that may intensify when facing moral or legal dilemmas. Huang et al. (2024) further confirmed that SRL is context-dependent, shaped by learning environment and prior training. Together, these findings reveal an imbalance: while SRL is recognized as crucial for mastering scientific knowledge, its role in ethical and legal learning—where reasoning is uncertain and contested—remains underexplored.

Understanding why students struggle to apply moral and legal principles, despite strong cognitive ability, requires attention to the emotional and cultural challenges of ethical learning. Unlike biomedical topics, law and ethics evoke uncertainty and personal tension that can disrupt self-regulation. Patel et al. (2015) found that struggling students often failed not from lack of knowledge but from weak emotional monitoring and reflection. Van Nguyen et al. (2015) similarly showed that unregulated stress reduces self-regulatory behavior, leading to disengagement from reflection. Gold et al. (2015) linked medical learners' well-being to their ability to recognize emotional limits and seek support—skills rooted in reflection and regulation. Hsieh et al. (2024) observed that confusion in applying ethical principles often stemmed from emotional discomfort rather than ignorance. Together, these findings highlight that learning ethics and law requires managing both thought and emotion simultaneously.

This challenge underscores the need to identify and cultivate self-regulatory strategies that help students learn effectively in moral–legal contexts. While SRL has been widely studied in cognitive domains, its application to ethics learning remains limited. Sandars (2010) argued that SRL should be explicitly developed within curricula, as reflection fosters autonomy and resilience. Hofer and Yu (2003) likewise showed that

structured reflective activities strengthen learners' ability to plan and assess their thinking. Applied to ethics education, these strategies encourage students to question, interpret, and apply principles rather than memorize them. Wong and Trollope-Kumar (2014) described professional identity formation as an ongoing negotiation between inner values and external expectations—a process closely aligned with self-regulation. Examining SRL in this setting thus offers practical value for designing curricula that produce reflective, ethically grounded professionals rather than rule followers.

Building on these foundations, this study explores how medical students regulate their learning in medical law and ethics. By focusing on planning, monitoring, and reflection, it seeks to uncover how students move from memorizing codes to reasoning about professional responsibility. The findings aim to clarify how SRL operates in emotionally charged contexts and guide educators in integrating cognitive discipline with moral reflection. As Avargil, Saleh, and Kerem (2025) noted, reflective writing and dialogue are key to linking learning with professional identity. In this light, SRL emerges not only as a psychological construct but as an ethical competency—preparing future physicians to think critically, act responsibly, and learn continuously throughout their careers.

## 2 METHOD

The exploratory nature of this study required a qualitative approach to understand how medical students manage their learning when engaging with the Medical Ethics course. Because the study aimed to capture participants' internal reasoning, emotional experiences, and learning strategies, semi-structured interviews were chosen as the main data collection method. This design allowed participants to express not only what they studied but also how they thought, reflected, and adjusted their behaviors in response to complex ethical and legal materials. The interpretive orientation of the research was guided by a constructivist worldview, recognizing that understanding emerges through students' personal meaning-making rather than through measurement alone.

The study was conducted at a large public university offering a five-year undergraduate medical program. Within this curriculum, the Medical Ethics module is taught during the second year and introduces students to core topics such as consent, negligence, patient rights, and confidentiality. Because the module often challenges

students to balance technical knowledge with moral reflection, it provided an appropriate setting for exploring how they regulate their learning in value-driven contexts. To ensure a range of perspectives, participants were recruited from the entire second-year cohort through voluntary invitations shared in class announcements. Out of the students who expressed interest, thirteen were selected to represent different gender and academic backgrounds. All were full-time medical students aged between twenty and twenty-three and had successfully completed the module before the interviews.

As the inquiry focused on depth rather than breadth, semi-structured interviews were conducted individually in a quiet meeting room on campus. Each conversation began with general questions about how participants prepared for and approached their law and ethics studies, gradually moving toward more specific reflections on motivation, coping, and reflection. The interviewer followed a flexible guide with prompts such as, “What do you usually do before a class on legal or ethical topics?” and “How do you deal with cases or questions that make you feel uncertain or uncomfortable?” This flexible approach allowed participants to speak freely and guided them to elaborate on their strategies and emotional responses. Interviews lasted between forty-five and sixty minutes, were audio-recorded with permission, and transcribed verbatim. Data collection continued until the research team agreed that new interviews were no longer generating substantially new ideas, indicating thematic saturation.

Once transcription was completed, the data were analyzed thematically following the six-step framework by Braun and Clarke (2006). The analysis began with repeated reading of each transcript to achieve familiarity and identify initial impressions. Codes were then generated inductively to capture relevant aspects of students’ planning, monitoring, and reflection processes. These codes were iteratively reviewed and grouped into broader themes that reflected patterns across participants’ experiences. As the themes took shape, the researchers revisited the data to ensure that the analysis remained grounded in the original meaning and language of the participants. To maintain rigor, two researchers independently coded a subset of transcripts, discussed interpretations, and reached consensus on the final theme structure. Analytical memos and reflexive notes were kept throughout to acknowledge possible bias and track how insights evolved over time.

### 3 RESULTS

The interviews revealed how medical students learned to navigate the demanding intersection of legal reasoning, ethical sensitivity, and personal belief. Their stories moved far beyond the surface of studying definitions or memorizing laws. As they described their struggles, strategies, and turning points, it became clear that learning medical ethics was not only an academic exercise but also a process of self-discovery. Through reflective accounts and vivid examples, four interconnected themes emerged: learning through moral curiosity, structuring chaos into clarity, balancing emotion and reason, and transforming learning into professional purpose. Together, these themes illustrate how students slowly built the confidence and self-regulation needed to engage deeply with issues of justice, responsibility, and professional duty.

The first theme, learning through moral curiosity, captured the way students transformed initial confusion into a drive to understand the human meaning behind legal rules. Many recalled starting the course with the mindset of memorizing codes but soon realizing that this approach left them unsatisfied. One student explained that “reading about negligence or patient rights felt empty until I began asking why these laws exist in the first place.” Another shared how she would “pause during study to imagine the person behind each case — the patient, the doctor, the family — and suddenly the rule became a story, not a paragraph.” This curiosity often acted as the spark that sustained motivation during challenging topics. Instead of perceiving legal study as rigid, they began viewing it as a living conversation about values. As they questioned the moral purpose of laws, students unconsciously practiced self-regulation, setting goals for understanding rather than memorization and evaluating their grasp through reflection on real-life implications.

The second theme, structuring chaos into clarity, reflected how students learned to manage the overwhelming amount of information in law and ethics through deliberate planning and strategy. Several participants described feeling lost in the beginning, unable to distinguish principles, cases, and procedures. Over time, they developed personal systems to bring order. One participant laughed as he described how “my desk looked like a courtroom at first — sticky notes everywhere — until I made color codes: red for patient rights, blue for malpractice, green for consent.” Another spoke about using timelines to track legal progressions in case law, saying that “once I could see the logic behind how laws evolved, everything started making sense.” These self-generated

structures were not assigned by instructors; they emerged from the students' need to cope with cognitive overload. The process of organizing material — making summaries, flowcharts, and comparisons — became both a practical tool and an act of self-regulation that helped them monitor their progress and confidence. In their words, structure became “a way to stay calm,” and planning was described as “a way of keeping control over something that always seemed too big.”

The third theme, balancing emotion and reason, described the students' internal negotiation when facing ethically charged cases. Many admitted feeling discomfort or even guilt when their reasoning clashed with their personal or religious values. One student recalled reading about end-of-life decisions and feeling “a lump in my throat — I didn't know what was right, but I couldn't stop thinking about it.” Another described how she used conversation to release tension: “After class, I would talk to my friends — sometimes we disagreed completely, but those talks helped me see that uncertainty is part of medicine.” Others sought reflection in solitude. A quiet student smiled and said, “I wrote short notes to myself after lectures — not about what to memorize, but about what I felt and whether I could defend my choice if I were the doctor.” These emotional reflections became cognitive tools; through expressing and analyzing their discomfort, students learned to regulate emotional reactions and sustain motivation. Rather than avoiding moral tension, they began to see it as evidence of genuine learning. The balance between emotion and reason became, as one participant put it, “the real test of understanding — if I can think clearly when I feel strongly, then I'm learning.”

The final theme, transforming learning into professional purpose, captured the moment when students began to connect their study of law and ethics with their future role as doctors. This transformation often appeared in reflective comments about accountability and empathy. One participant noted, “I used to think law was about punishment, but now I see it's about protecting people — including doctors.” Another recalled an assignment on confidentiality that made him realize “ethics is not just about doing the right thing but about building trust — the patient's safety depends on my honesty.” These insights represented more than cognitive understanding; they marked a moral shift where students internalized values as part of their professional identity. They spoke of feeling more responsible, more cautious, and more empathetic after completing the course. As one participant summarized, “I don't study law to pass; I study it to understand the kind of doctor I want to become.” In these reflections, learning evolved

into purpose, and self-regulation extended beyond academics into the lifelong commitment of ethical practice.

These four themes reveal a powerful narrative of intellectual and emotional growth. Students entered the course uncertain and overwhelmed, but through curiosity, structure, emotional awareness, and reflection, they developed the discipline to navigate moral complexity with increasing confidence. Their words remind us that teaching medical law and ethics is not simply about imparting principles; it is about guiding students through a process of self-regulated transformation, where knowledge, feeling, and responsibility become inseparable parts of learning.

#### 4 DISCUSSION

The findings of this study deepen understanding of how medical students regulate their learning within the moral and legal dimensions of medicine. Self-regulated learning (SRL) in this context emerged not only as a cognitive process but also as a reflective and moral one. Students approached ethics as an experience that reshaped their sense of responsibility rather than as a task to complete. This dual process—intellectual and ethical—supports Sandars and Cleary’s (2011) view that self-regulation underpins lifelong professional growth through reflection and adaptation. Zimmerman (1986) and Zimmerman and Moylan (2009) similarly emphasized planning, monitoring, and reflection as the core of SRL—behaviors clearly evident in this study. Yet, unlike earlier models focused mainly on cognition, these findings highlight the emotional and moral dimensions of regulation. This aligns with Wong and Trollope-Kumar’s (2014) argument that reflection and emotional insight are essential for professional identity formation, suggesting that self-regulation and moral growth evolve together. Recent evidence from Ali et al. (2024) reinforces this view, showing that reflective moral reasoning fosters ethical awareness more effectively than memorizing codes. The transformation observed here—learning not “about” ethics but “through” it—extends SRL theory into the moral domain, reframing it as a process of managing meaning rather than performance.

The first major theme, *moral curiosity as the gateway to self-regulation*, illustrates how motivation arises from values rather than external pressure. Students described curiosity as the moment when ethics and law became personal, turning passive study into active inquiry. This aligns with Zimmerman’s (1986) *forethought* phase, where purpose

drives goal setting. However, curiosity here was both cognitive and ethical—the desire to understand “why” behind each law intertwined with empathy and moral reflection. Shitarukmi, Claramita, and Rahayu (2023) found that SRL thrives when learners question and construct meaning in authentic contexts, as seen when participants linked legal rules to human consequences. Similarly, Artino, La Rochelle, and Durning (2010) showed that intrinsic motivation predicts persistence; this study extends that idea by identifying moral curiosity as a form of intrinsic drive. The emotional dimension of curiosity also echoes Rahimzadeh et al. (2023), who argued that emotion can deepen moral insight. Here, curiosity acted as both motivation and reflection—an ethical spark that helped students navigate uncertainty and find meaning. What began as asking “why laws exist” evolved into “what kind of doctor I want to be,” showing how SRL bridges cognition, emotion, and professional identity in one integrated process.

As curiosity evolved into intentional learning, students began creating personal systems to manage the complexity of law and ethics—a process captured in the theme *structuring chaos into clarity*. Organization, planning, and reflection acted as both cognitive and emotional anchors. Students used color codes, flowcharts, and summaries not only to remember information but to regain control, reflecting Zimmerman’s (1986) performance control phase, where learners monitor and adjust strategies to stay focused. Lucieer et al. (2016) found that structured self-regulation supports academic achievement by providing stability in uncertain contexts. In this study, such stability was also emotional; students described organization as “a way to stay calm” and “a way to think clearly.” This aligns with Hofer and Yu (2003), who showed that organization scaffolds deeper thinking through reflective design. Panadero and Alonso-Tapia (2014) added that each cycle of planning and reflection strengthens metacognition and confidence. Fatima et al. (2025) confirmed that structured SRL instruction enhances performance in clinical clerkships, while Cecilio-Fernandes et al. (2024) emphasized the role of feedback in reinforcing this metacognitive cycle. Together, these findings suggest that structured approaches in moral and legal education do more than organize content—they sustain emotional balance, foster reflection, and turn uncertainty into self-direction.

Just as organization stabilized cognition, balancing emotion and reason marked a deeper level of reflective adaptation—the shift from procedural learning to moral maturity. Students described discomfort when facing ethical dilemmas such as end-of-life care or patient autonomy, realizing that managing emotion was central to learning.

This aligns with Zimmerman and Moylan's (2009) self-reflection phase, where learners evaluate both performance and affect. Patel et al. (2015) showed that academic struggle often stems from emotional difficulty rather than lack of knowledge, while Van Nguyen et al. (2015) found that stress weakens reflective strategies. In this study, students actively engaged with emotion through journaling and peer dialogue, transforming confusion into insight. Wong and Trollope-Kumar (2014) argued that reflecting on emotion builds professional identity by reframing uncertainty as growth. Similarly, Gold et al. (2015) linked emotional reflection with resilience, and Hsieh et al. (2024) showed that addressing discomfort restores ethical reasoning. These findings parallel the present study: emotional unease is not failure but a catalyst for moral reflection. Balancing emotion and reason thus became a form of ethical regulation, integrating feeling and thought to sustain curiosity, discipline, and empathy.

As students learned to manage their emotions, their reflections began linking learning with professional identity, forming the fourth theme—transforming learning into professional purpose. This shift from understanding concepts to internalizing values marks a key outcome of self-regulated learning (SRL) in moral-legal education. Students no longer saw law and ethics as external rules but as reflections of the kind of physicians they wished to become. This mirrors the advanced phase of self-regulation described by Zimmerman and Moylan (2009), where motivation becomes internal and rooted in self-concept. Students in this study described a growing sense of accountability—viewing ethical reasoning as a process of judgment rather than rule memorization. This aligns with Foong, Nazri, and Holder (2018), who found that reflection helps professional students align inner motivation with external expectations, turning learning into identity formation. Similarly, Wilson, Cowin, Johnson, and Young (2013) emphasized that identity develops through reflection and dialogue, not instruction alone. Avargil, Saleh, and Kerem (2025) further showed that reflective writing helps learners connect personal values with self-concept over time. In the same way, participants in this study reported that topics like patient rights or confidentiality led them to see themselves as responsible professionals, not just students. Pach, Stoffels, Schoonmade, van Ingen, and Kusrkar (2025) also found that reflection in humanities courses supports moral identity formation. Together, these findings show that SRL in law and ethics is not simply an academic task but a form of moral apprenticeship—allowing students to practice ethical agency before entering clinical roles and to turn compliance into conviction.

The broader theoretical implications of this transformation extend current SRL models. Traditional frameworks have focused on cognitive and behavioral regulation—how students plan, monitor, and evaluate their learning—while often neglecting the emotional and ethical aspects of moral education. This study expands these models by showing that SRL functions within emotional and ethical domains central to professional identity. Students' experiences of curiosity, structure, emotional balance, and identity growth reveal an integrated cycle connecting cognition and conscience. This supports calls by Cecilio-Fernandes et al. (2024) and Huang et al. (2024) for adapting SRL strategies to specific learning contexts and disciplinary cultures. It also responds to the concern raised by Zielina, Škoda, and Ivanová (2024) that moral competence can decline without continued reflection. Embedding structured SRL activities—goal setting, emotional monitoring, and reflective evaluation—within ethics education may therefore sustain moral growth across training years. Viewed this way, SRL becomes more than an academic tool; it is a framework for ethical resilience, uniting psychological regulation with moral development to prepare students for lifelong professional integrity.

The theoretical insights of this study have clear implications for how law and ethics should be taught in medical education. If curiosity, reflection, and personal meaning drive ethical learning, then instruction must nurture these qualities rather than suppress them. Educators can embed self-regulated learning (SRL) principles into ethics courses through reflective journaling, guided case discussions, and formative feedback that develops both cognitive and emotional awareness. Sandars (2010) emphasized that SRL should be intentionally structured within curricula to help learners become active interpreters of experience. Likewise, Hofer and Yu (2003) found that explicit “learning-to-learn” activities—such as planning, monitoring, and reflecting—enhance autonomy and metacognitive skill. Incorporating these strategies into moral and legal education can help students face ethical uncertainty with confidence. Avargil, Saleh, and Kerem (2025) further showed that reflection-based exercises increase students' sense of agency and ownership of their development. Similarly, Battista, Torre, and Konopasky (2025) stressed that health professions curricula should include diverse forms of reflection and feedback, especially in areas involving judgment rather than memorization. These insights align with the present findings, suggesting that ethics and law education should shift from lecture-based delivery to interactive, self-regulatory learning environments that

cultivate both understanding and emotional discipline—the hallmarks of professional maturity.

While this study provides valuable insights, it also has limitations and areas for further exploration. The findings are drawn from a small group of students in one institution, offering depth but limiting generalizability. Like most qualitative work, the focus was on understanding meaning rather than measuring outcomes. Future research could adopt mixed-method approaches to validate the patterns observed here. Pineda-Cañar, Montaña-Caicedo, and García-Perdomo (2024) emphasize that combining qualitative and quantitative methods can enhance rigor and applicability in medical education. Such approaches could assess how specific self-regulated learning (SRL) strategies—such as reflective journals or peer discussions—shape ethical reasoning and performance over time. Lucieer et al. (2016) and Cho, Marjadi, Langendyk, and Hu (2017) also noted that SRL outcomes vary across contexts, suggesting the need for longitudinal and cross-institutional studies to test the broader relevance of the emotional–ethical dimension identified here. Additionally, integrating physiological or behavioral indicators of stress and reflection may clarify how emotion regulation supports moral reasoning. Future studies could also examine faculty perspectives to understand how teachers’ reflective habits influence students’ self-regulation and ethical development.

This study highlights that learning medical ethics involves shaping the self as much as gaining knowledge. The capacity to plan, monitor, and reflect on moral reasoning is a lifelong form of self-regulation. Sandars and Cleary (2011) describe self-regulation as central to ongoing professional growth, while Wong and Trollope-Kumar (2014) emphasize the role of emotional honesty and personal values. The students in this study reflected both ideas—showing how curiosity, structure, and emotional balance foster moral learning that is personal yet professional. As Zimmerman (1986) noted, self-regulated learners are adaptive; in ethics, this adaptability becomes moral strength. Avargil et al. (2025) further showed that reflective self-regulation builds integrity alongside competence. Together, these insights suggest that self-regulated learning in ethics education is not just a teaching method but a developmental process connecting cognition with conscience. Through this integration, students learn not only to make ethical decisions but to live by them—uniting knowledge, empathy, and responsibility at the heart of professionalism.

## 5 CONCLUSION

This study set out to explore how medical students regulate their learning within the context of medical law and ethics, and the findings reveal that self-regulated learning extends far beyond strategy or study habits. It is, at its heart, a moral and reflective process through which learners negotiate between knowledge, emotion, and personal values. By tracing students' journeys from curiosity to conviction, the research shows that SRL serves as a bridge between understanding ethical principles and embodying them in professional identity. In doing so, it affirms that the study of law and ethics is not peripheral to medical training but a vital environment for cultivating judgment, empathy, and moral reasoning—the core attributes of responsible medical practice.

Theoretically, this work extends traditional models of self-regulated learning by positioning emotion, moral curiosity, and reflection as central—not peripheral—components of regulation. Students in this study demonstrated that managing ethical uncertainty requires the same metacognitive and affective control described by Zimmerman (1986) and Sandars and Cleary (2011), yet they applied these processes to questions of right and wrong rather than to procedural or scientific tasks. In this way, SRL becomes not only a theory of learning efficiency but a theory of moral growth. This conceptual integration supports recent work by Zielina et al. (2024) and Avargil et al. (2025), who emphasized that sustained reflection safeguards both competence and ethical awareness. The study's contribution, therefore, lies in revealing self-regulation as a moral skill—an ongoing alignment between knowledge, feeling, and professional integrity.

Practically, these insights invite educators to rethink how ethics and law are taught. Instead of isolating moral reasoning as a theoretical exercise, teaching should create opportunities for curiosity, reflection, and emotional dialogue. Structured self-regulation practices—such as reflective writing, formative feedback, and peer discussion—can turn moral confusion into clarity and uncertainty into confidence. By designing ethics curricula that encourage students to plan, monitor, and reflect on their learning, educators cultivate not only informed professionals but ethically resilient ones. Ultimately, the goal is not to produce students who can recite legal clauses but to graduate doctors who can navigate the moral realities of clinical life with insight, empathy, and integrity.

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### Authors' Contribution

Both authors contributed equally to the development of this article.

### Data availability

All datasets relevant to this study's findings are fully available within the article.

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