Scientific Research Publishing

Creative Education, 2026, 17(3), 509-522
https://www.scirp.org/journal/ce
ISSN Online: 2151-4771
ISSN Print: 2151-4755

# Beyond External Obligation: Rethinking the Framework and Spirit of Medical Education

**Anatoli Em. Argyrou, Maria Giannari, Andreas C. Lazaris**

First Department of Pathology, School of Medicine, National and Kapodistrian University of Athens, Athens, Greece
Email: a.argyrou@outlook.com

**How to cite this paper:** Argyrou, A. E., Giannari, M., & Lazaris, A. C. (2026). Beyond External Obligation: Rethinking the Framework and Spirit of Medical Education. *Creative Education, 17,* 509-522.
https://doi.org/10.4236/ce.2026.173030

**Received:** January 14, 2026
**Accepted:** March 28, 2026
**Published:** March 31, 2026



## Abstract

The acquisition of any knowledge depends to some extent on the existence of pressure on the learner. This pressure is traditionally exerted exogenously in the form of mandatory participation in the educational process or intimidation through failure in the exams. Could, on the other hand, this pressure be the result of an internal drive of the learner? In modern medical schools, students often attend only mandatory lectures and clinical rotations. Their primary motivation is the fear of being penalized or failing in the exams, rather than genuine interest. Medical students are often driven by external pressures such as compulsory attendance, deadlines and exams, but these only occasionally lead to meaningful learning. The majority of them seem to study medicine because they can and not because they consciously want to. Cultivating intrinsic motivation, through self-awareness and internal commitment to studying medicine, supported by counseling services that help students reflect on why they chose medicine, is essential for achieving deeper understanding and optimal educational outcomes. This paper explores the underlying issues with compulsory attendance policies. It contends that thoughtfully designed non-mandatory courses do not lower standards; instead, they elevate the mission of medical education. When curiosity, rather than obligation, drives learning, students become truly engaged. They develop into physicians who are not only more knowledgeable, but also more adaptable and compassionate. Upon beginning their medical studies, students would benefit greatly if they were provided with counseling services integrated into their curriculum and aimed at developing an internal drive for their studies.

## Keywords

Compulsory Education, Autonomy, Experiential Learning, Intellectual Hospitality

## 1. Introduction: The Concept of Compulsory Attendance in Education

This paper advances the explicit thesis that medical education should adopt a hybrid model in which core clinical competencies should remain mandatory, while selected experiential and humanities-based components transition to autonomy-supportive, voluntary structures on the condition that appropriate counseling support is available. It makes three principal contributions: 1) articulating a policy distinction between required and elective domains; 2) proposing a longitudinal counseling and coaching model to cultivate internal commitment; and 3) outlining expected outcomes including strengthened intrinsic motivation, deeper engagement, and enhanced professional identity formation.

In this manuscript, "compulsory attendance" refers to required presence in large-group lectures, small-group seminars, laboratory sessions involving technical skill acquisition, and clinical placements with direct patient contact. "Non-mandatory courses" refer to structured curricular or co-curricular activities—such as humanities electives, reflective seminars, simulation-based enrichment sessions, and interdisciplinary workshops—that do not condition academic progression on attendance. This distinction is essential because laboratory and clinical environments involve patient-safety and accreditation implications that differ from lecture-based formats.

Walk through any medical school and you'll notice it: students gather outside the required classes, while elective sessions frequently remain almost deserted. This isn't simply a matter of scheduling. It forces us to consider the true purpose of education. Are we merely filling students' minds with facts, or are we aiming to cultivate independent thinkers capable of handling the complex realities of illness and suffering? At present, fear of failing exams overshadows everything. Students display knowledge for grades, not for true understanding. Their attendance is driven by necessity, not desire (Riccioni et al., 2015). The central question on their minds is not, "What can I learn here?" but, "Will this be on the test?". This environment often fosters a sense of disengagement, where students, though physically present, are not actively participating in their learning (Lamb et al., 2020: p. 314). This passivity can lead to a transactional mentality, eroding trust between faculty and students and potentially undermining the quality of small-group learning experiences (Lamb et al., 2020: p. 315). This situation is further exacerbated by the inherent tension between mandatory attendance policies and the cultivation of student autonomy, which can ultimately undermine intrinsic motivation (Munneke et al., 2019: p. 2368; Rodriguez-Lara et al., 2025: p. 6). Such policies, often rooted in traditional pedagogical approaches, fail to acknowledge the evolving needs of adult learners who thrive in educational frameworks emphasizing real-world application and critical analysis (Crichlow, 2024: p. 70). Instead, modern medical education should pivot towards models that empower students to make choices about their learning, fostering a more profound and self-directed engagement with the curriculum (Arps et al., 2024: p. 1376). This shift would enable students

to move beyond surface-level learning, prompting them to explore subjects of genuine interest and develop competencies crucial for complex clinical environments (Chang et al., 2024). This paradigm shift necessitates a re-evaluation of assessment strategies, moving beyond rote memorization to authentic measures that evaluate critical thinking, adaptability, and clinical reasoning (Fatima et al., 2024). Moreover, incorporating student perspectives into educational decision-making and ensuring curriculum relevance can significantly enhance engagement and the overall academic experience (Almansour & Almoayad, 2024). Recognizing students' reasons for skipping classes and what might encourage their return is crucial for developing more effective engagement strategies (Emahiser et al., 2021). One strategy involves understanding that extracurricular activities, which are inherently non-mandatory, can significantly enhance students' interdisciplinary competencies and professional development (Oliveira et al., 2024). This paper seeks to explore the pedagogical implications of compulsory versus voluntary attendance in higher education, specifically within medical curricula, examining how each approach influences student engagement, learning outcomes, and the development of intrinsic motivation. It investigates whether a shift toward voluntary participation might better align with the professional development goals of future physicians, who require self-directed learning skills (Arps et al., 2024: p. 1354; Lamb et al., 2020: p. 314; Belezini et al., 2021).

## 2. The Psychology of Obligation versus Autonomy

The autonomy-obligation argument is grounded in Self-Determination Theory (SDT), which posits that intrinsic motivation is strengthened when autonomy (perceived volition), competence (sense of effectiveness), and relatedness (meaningful connection) are supported. Autonomy-supportive educational policies include meaningful choice and flexible pathways; competence is reinforced through formative feedback and authentic assessment; relatedness is cultivated through mentoring and collaborative reflection. Excessive surveillance or punitive attendance policies risk undermining these motivational needs.

A traditional educational system based on compulsion creates a sense of external pressure. Students attend to avoid negative consequences—not because of a real passion for learning. This mindset of avoiding failure and embarrassment may keep everyone afloat, but it encourages passivity. The result is individuals who follow rules rather than think independently. Alongside these external motivations, in order for someone to show interest and actively engage with their studies, one could consider the introduction, already in the first year of medical school, of counseling services that would explain to the student and help them realize that they are in medical school because they want to be, and not simply because they are able to be there. In this way, the student could internally motivate, or, in a sense, compel, themselves to demonstrate active interest in their studies.

Truthfully, in order for someone to do something and to engage with something seriously, some form of pressure or compulsion is necessary. What we wish to

emphasize, however, is that this compulsion does not necessarily always have to be imposed externally; it can also be the product of an internal process for each student, one that will lead them to a sound, free decision. Through this process, the student can evaluate their position within the school and take advantage of all the opportunities the school offers in order to acquire substantial knowledge beyond compulsory attendance and beyond examinations written or oral.

The prevailing educational paradigm often mandates student attendance and participation, ostensibly to ensure comprehensive learning and accountability. However, this approach frequently cultivates extrinsic motivation, wherein students engage primarily to avoid negative consequences rather than from an intrinsic desire to learn (Munneke et al., 2019: p. 2368). This compulsory framework can inadvertently foster a mindset of compliance, potentially stifling genuine intellectual curiosity and independent thought. Conversely, an educational environment that champions student autonomy and voluntary engagement tends to cultivate deeper intrinsic motivation, leading to more profound learning outcomes and enhanced subject mastery (Cullen & Oppenheimer, 2024; Lazari et al., 2023a).

While many medical institutions mandate strict attendance positing its criticality for knowledge acquisition and the development of non-cognitive skills, such as professionalism and teamwork, rigid enforcement may prove counterproductive if not paired with experiential educational activities (Rodriguez-Lara et al., 2025: p. 6). Indeed, the move away from mandatory attendance policies, as seen in some medical schools, stems from a recognition that such policies can infantilize students, erode trust, and negatively impact small group learning experiences, leading to a transactional mentality rather than genuine engagement (Lamb et al., 2020: p. 315).

## 3. Humanism at the Core of Medical Learning—Including Experiential Approaches

Medicine, being fundamentally human, is more than a science. Doctors apply technical knowledge, but they also enter rooms filled with suffering, hope, and uncertainty. That's why experiential learning is essential. It's not just about memorizing steps—it's about reflecting on authentic encounters. Whether it's a challenging patient interview, a simulated scenario, or hearing someone's illness narrative, these experiences linger. Removing any self-centered restrictive elements from a teacher's or student's personality will improve the way you interact with them. By instilling empathy in our students and promoting empathy for patients, we create a relevant model for modern physicians. Of course, this cannot be imposed exogenously on teachers, but it is still possible. It should be implemented endogenously for those who still accept appropriate humanitarian incentives, which cannot and should not be imposed either (Lazari et al., 2023b).

This framework integrates humanistic principles, which emphasize student-centered and self-directed learning, with experiential methodologies that facilitate knowledge construction through active engagement with the environment

(Firstenberg & Stawicki, 2021). This integration allows learners to critically reflect on prior assumptions and meanings, fostering transformative knowledge acquisition. This pedagogical synergy aims to cultivate not only technical proficiency but also core competencies such as integrity, compassion, and empathy, crucial for holistic medical practice. Furthermore, the incorporation of medical humanities within basic medical education is essential for instilling spirituality, love, compassion, and moral qualities in future physicians (Pesotskaya et al., 2021: p. 5; Palumbo, 2024) (**Figure 1** and **Figure 2**). This curricular design, often aligned with frameworks like InspirE5, leverages the human sciences, arts, and social sciences to cultivate ethical reflection and critical thinking among medical students. This approach moves beyond a purely biomedical understanding of disease to encompass the intricate interplay of individual experiences and environmental contexts in patient care (Carr et al., 2022). This integration aligns with calls for medical curricula to become more learner-focused and experiential, merging clinical training with social sciences and humanities to cultivate professional values and a holistic perspective of patient experiences (Song & Tang, 2017: p. 130; Salaber, 2014). This integrated pedagogical model emphasizes that learning is not merely a cognitive process but also an emotional and social endeavor, shaped significantly by direct encounters and interactions with diverse cultural and clinical realities.

**Figure 1.** Medical students' outing to watch a theatrical performance as part of the elective course "Humanitarian Values and Modern Medicine".

**Figure 2.** Optional participation of medical students in a painting workshop as part of the elective course "Humanitarian Values and Modern Medicine".

An essential aspect of adapting to such educational evolution is the transformation of assessment methods. Traditional exams focused on rote memorization must give way to assessments that evaluate the application of knowledge in realistic clinical scenarios. Zhou et al. illustrate how experiential learning facilitated by simulations leads to sustained improvements in clinical knowledge, underscoring the need for assessments that reflect real-world competencies and decision-making (Zhou et al., 2023). The integration of clinical scenarios, ethical discussions, and reflective essays as primary modes of evaluation shifts the educational focus from passive learning to active intellectual engagement, aligning with contemporary educational theories (Pokrajac et al., 2022).

Mandatory courses tend to emphasize procedures and theory. Optional environments, by contrast, allow for deeper engagement: practicing diagnoses through role-play, writing reflections after a shift, discussing complex cases, or listening directly to patients. Here, students don't just learn about diseases—they witness how illness shapes a person's identity and life.

Experiential learning transforms facts into relationships and ideas into emotions. It activates the moral and interpretive faculties. The outcome? Future doctors who perceive patients as individuals, not just clinical cases. Optional experiential learning does not simply impart knowledge; it fosters empathy and helps students discover their professional identity, rooted in authentic human connection (Lazaris et al., 2015).

## 4. Non-Mandatory Courses as Intellectual Hospitality

Intellectual hospitality is implemented through clearly defined learning objectives emphasizing dialogue and reflection, open enrollment policies, facilitation centered on moderated discussion rather than didactic delivery, and assessment alignment via reflective essays or portfolio-based evaluation. Structural dualism refers

to a curriculum organized into a competency-guaranteeing core and an exploratory elective strand, each with transparent entry criteria, learning outcomes, and assessment standards. All these elements should be explicitly articulated and thoroughly detailed within the curriculum at the level of each individual course.

Non-mandatory courses shall be seen as an important vehicle for intellectual hospitality in educational contexts. As opposed to required courses, which may give students a sense of burden, voluntary programs allow for the creation of an inclusive and participatory atmosphere where ideas can be openly shared. This is a huge psychological difference that course format presents in terms of student engagement and learning dynamics. It has been revealed in research that participation in a non-mandatory setting may lead students to contribute authentically, since they participate as a consequence of their curiosity rather than by obligation, thereby resulting in class atmosphere conditions that are appropriate for collaboration toward deeper idea exploration (Holmes et al., 2021; Ishihara et al., 2021) (**Figure 3**).

**Figure 3.** Examples of voluntary participation of medical students in interactive study groups of digitized histological slides.

The concept of intellectual hospitality describes the welcoming quality of a learning environment that recognizes and values students' autonomy as learners.

Elective courses implicitly convey that the students have chosen to be there, which signals their ability and preparation to participate. This sense of participant agency is important because it frames students as partners in their learning process rather than as passive vessels to be filled with knowledge. For instance, researchers have demonstrated how the structure of classes emphasizing collaborative activity, such as book clubs centered on discussion, significantly improves students' ability to self-navigate their learning and challenge assumptions (Holmes et al., 2021; Ishihara et al., 2021). It is in these collaborative spaces that students are more apt to feel comfortable contributing their insights and critically engaging with course materials.

Equally important, the flexible and elective nature of non-compulsory courses aligns with modern educational paradigms that emphasize learner-centered approaches. Such approaches have been shown to offer grounding for fostering cognitive, social, and teaching presence in educational experiences, as noted by Garrison et al. (Garrison et al., 1999). By structuring courses around student interests and self-directed learning, educators foster an environment in which intellectual curiosity thrives, nudging students toward active participation rather than observation (Salaber, 2014). Such a paradigm has been proven to bring about considerable benefits, including increased learning outcomes and higher levels of discussion and collaboration (de Lima et al., 2019).

Voluntary courses, in contrary to mandatory courses, provide an avenue for impetus in spontaneous participation in the educational procedure, enabling various voices to be heard and respected in dialogue. Students are much more likely to engage with the subject matter when they are able to choose their path in education. Literature shows students who are active in dialogic pedagogies report that feeling included and valued reinforces their commitment to the learning process, and this is thought to enhance student learning experiences (Yoon et al., 2020; Vidic et al., 2015). The voluntary aspect of choosing a seminar involves students asserting agency, creating more powerful relationships between themselves and their peers and the subject matter, thus crafting enriched educational experiences. In short, non-compulsory courses reflect one pedagogical stance that professes, on one hand, the autonomy of the learner and, on the other, intellectual hospitality. The collaborative nature of these classes not only makes learning more engaging, but also fosters a sense of shared ownership in knowledge construction, which again redefines traditional educational dynamics.

## 5. The Case for Structural Dualism: Balancing Obligation and Freedom

Mandatory participation should remain for clinical placements, laboratory skills training, and formally assessed teamwork simulations due to patient safety and competency standards. Large-group lectures primarily transmitting information, selected humanities modules, and enrichment seminars may transition to elective status without compromising academic rigor, on the condition that appropriate

counseling support is available. This hybrid structure balances professional accountability with autonomy support.

A longitudinal counseling service should begin in year one and continue throughout medical training. Small groups of 6 - 8 students would meet three times per semester with trained faculty mentors. Core activities would include values clarification, reflective dialogue on motivations for studying medicine, structured learning-goal setting, and guided review of clinical experiences. Optional individual consultations would be offered once per semester. Evidence from mentoring and coaching interventions in medical education indicates positive effects on engagement, resilience, and professional identity formation (Martinho et al., 2023).

The dual approach to medical education, which encompasses both essential knowledge and the opportunity for personal growth, intellectual exploration, and ethical reasoning, is vital for producing well-rounded physicians. This approach acknowledges that medicine is not only a scientific discipline but an art that requires the integration of technical expertise and humanistic skills. Core competencies such as anatomy, pharmacology, and emergency procedures are essential, ensuring students receive the foundational knowledge necessary for competent patient care. However, the incorporation of non-mandatory experiences in medical training fosters curiosity, critical thinking, and ethical maturity among students, thereby enhancing their overall development as healthcare providers (Martinho et al., 2023).

Counseling services should encourage students early on to choose the most essential educational tools for themselves. Recent studies highlight the importance of interactive learning methods, such as simulation-based training, which have gained prominence in medical education. Simulation allows students to practice essential skills in a safe environment, refining their decision-making and problem-solving capabilities. For instance, Martinho et al. demonstrated that simulated scenarios encourage reflection on clinical reasoning and communication, which are crucial for effective teamwork in a clinical setting (Martinho et al., 2023). Moreover, simulation-based learning has been shown to positively impact clinical knowledge retention and performance, offering learners the chance to engage with real-life challenges in a supportive framework (Palumbo, 2024).

Furthermore, the application of innovative assessment tools, such as Objective Structured Clinical Examinations (OSCEs), has proven effective in gauging competencies beyond theoretical knowledge. These structured evaluations not only measure technical skills but also assess interpersonal effectiveness and ethical reasoning—critical elements in patient care. As noted by Zabar et al., OSCEs facilitate interprofessional collaboration, allowing students to develop essential communication skills within safe simulated environments (Zabar et al., 2016). This assessment model aligns with contemporary shifts towards competency-based education, emphasizing the application of knowledge and relational aspects of medical practice rather than mere recall of facts (Young & Parviainen, 2014).

## 6. Building Professional Identity That Lasts

The patterns you establish in medical school shape your whole career. If your education is always about meeting external demands, you begin to see knowledge as just another box to tick. You study to pass exams or satisfy requirements. Motivation fades as soon as the pressure lifts.

But if your training is filled with hands-on learning and voluntary participation, education becomes personal. It's no longer just about meeting standards—it's about developing, staying engaged, becoming who you want to be. Even during the COVID-19 pandemic, when our department had to utilize e-learning modalities for curriculum delivery, students' participation and the interactivity dynamics between them and the professor were significantly enhanced with the results being prominent in students' expertise and performance (Manou et al., 2021; Manou et al., 2022a, 2022b; Lazari et al., 2023b).

Being present while learning, makes reflection a habit. You don't just wonder, "What did I do for my patient?". You ask, "What did I learn from my patient?" Clinical work becomes a classroom that never ends. The doctor remains curious, engaging with new research, recognizing their own limits, and learning from every encounter. This method shapes doctors who don't just acquire knowledge—they embody it as ethical, relational wisdom. They aim for more than mere competence. They seek deeper insight, viewing every patient not as a task, but as a person facing need. For example, in undergraduate pathology education, active learning and integrated approaches appear to be beneficial. Regardless of the teaching strategy, it is crucial to move the focus from merely summative achievement to formative, learning-centered development. Therefore, in addition to using cutting-edge techniques, a good teacher must promote intrinsic motivation and a more in-depth, introspective approach to learning (Mylonas et al., 2024; Argyrou et al., 2025).

Ultimately, when learning is chosen and rooted in experience, it becomes the lifeblood of a physician's work—a source of meaning, humility, and growth. These are professionals who remember the moral complexity of medicine, who see the individuality in every patient, and who never stop striving to be thoughtful, compassionate, and attentive to the true art of healing.

## 7. Conclusion: Letting Curiosity Lead Instead of Fear

Currently, medical education often narrows students' outlooks by training them to act out of fear—fear of mistakes, fear of not measuring up. Moving toward voluntary, curiosity-driven learning isn't about making things easier. It actually strengthens medical education. When students learn because they choose to, not because they must, they engage more deeply. They develop genuine commitment, viewing knowledge as a lifelong journey.

Medical school shouldn't be a forced march through requirements. It should be an invitation into the mysteries of life, illness, and healing. Give students the freedom to choose what they engage with, and you make them responsible for their

own development. In doing so, they become not only better doctors, but better people—guardians of the compassion that defines true medical care.

## Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

## References

Almansour, M., & Almoayad, F. (2024). Exploring Challenges and Perceptions in the Learning Environment: An Online Qualitative Study of Medical Students. *BMC Medical Education, 24,* Article No. 147. https://doi.org/10.1186/s12909-024-05116-8

Argyrou, A. E., Giannari, M., Polydorides, A., & Lazaris, A. C. (2025). Empowering Active Student Learning in Medical Education. *IOSR Journal of Research & Method in Education (IOSR JRME), 15,* 1-5.

Arps, S., Noviski, K. M., Tucker, L., & Tutwiler, A. (2024). Medical Students' Motivations for Participating in an Elective Focused on Social Inequalities and Health Disparities. *Advances in Health Sciences Education, 29,* 1353-1378. https://doi.org/10.1007/s10459-024-10313-7

Belezini, E., Katsoulas, N., Thomopoulou, G., & Lazaris, A. C. (2021). The Superiority of Interactive Courses Combined with the Teacher's Physical Presence in the Undergraduate Pathology Curriculum. *Journal of Contemporary Medical Education, 11,* 1-5. https://www.jcmedu.org/jcmedu-articles/the-superiority-of-interactive-courses-combined-with-the-teachers-physical-presence-in-the-undergraduate-pathology-curri.pdf

Carr, S. E., Harris, A., Scott, K., Ani-Amponsah, M., Hooker, C., Phillips, B., Noya, F., Mavaddat, N., Vuillermin, D. M., Reid, S., & Brett-MacLean, P. (2022) InspirE5: A Participatory, Internationally Informed Framework for Health Humanities Curricula in Health Professions Education. *BMC Medical Education, 22,* Article Number 490. https://doi.org/10.1186/s12909-022-03551-z

Chang, Y. I., Kovalchuk, I., Savytska, M., & Zayachkivska, O. (2024). Building Active Learning in Medical Education: How to Bridge Vision with Real Practice? *Proceeding of the Shevchenko Scientific Society. Medical Sciences, 76,* 1-7. https://doi.org/10.25040/ntsh2024.02.25

Crichlow, R. (2024). More than Survival: Embracing a New Paradigm in Medical Education. *Family Medicine, 56,* 69-71. https://doi.org/10.22454/fammed.2024.978379

Cullen, S., & Oppenheimer, D. (2024). Choosing to Learn: The Importance of Student Autonomy in Higher Education. *Science Advances, 10,* eado6759. https://doi.org/10.1126/sciadv.ado6759

de Lima, D. P. R., Gerosa, M. A., Conte, T. U., & de M. Netto, J. F. (2019). What to Expect, and How to Improve Online Discussion Forums: The Instructors' Perspective. *Journal of Internet Services and Applications, 10,* Article No. 22. https://doi.org/10.1186/s13174-019-0120-0

Emahiser, J., Nguyen, J., Vanier, C., & Sadik, A. (2021). Study of Live Lecture Attendance, Student Perceptions and Expectations. *Medical Science Educator, 31,* 697-707. https://doi.org/10.1007/s40670-021-01236-8

Fatima, S. S., Sheikh, N. A., & Osama, A. (2024). Authentic Assessment in Medical Education: Exploring AI Integration and Student-As-Partners Collaboration. *Postgraduate Medical Journal, 100,* 959-967. https://doi.org/10.1093/postmj/qgae088

Firstenberg, M. S., & Stawicki, S. P. (2021). *Medical Education for the 21st Century.*

IntechOpen eBooks. https://doi.org/10.5772/intechopen.95701

Garrison, D. R., Anderson, T., & Archer, W. (1999). Critical Inquiry in a Text-Based Environment: Computer Conferencing in Higher Education. *The Internet and Higher Education, 2,* 87-105. https://doi.org/10.1016/s1096-7516(00)00016-6

Holmes, C., Schoonover, N. R., & Atkinson, A. A. (2021). Negotiating Teacher Positionality: Preservice Teachers Confront Assumptions through Collaborative Book Clubs in a Social Studies Methods Course. *The Journal of Social Studies Research, 45,* 118-129. https://doi.org/10.1016/j.jssr.2020.07.003

Ishihara, S., Tommasini, A., Ponzelar, C., & Livmar, E. (2021). "Student-Led Education for a Better World?" Reflections in Conversation. *Högre utbildning, 11,* 107-118. https://doi.org/10.23865/hu.v11.3006

Lamb, S., Chow, C., Lindsley, J., Stevenson, A., Roussel, D., Shaffer, K. et al. (2020). Learning from Failure: How Eliminating Required Attendance Sparked the Beginning of a Medical School Transformation. *Perspectives on Medical Education, 9,* 314-317. https://doi.org/10.1007/s40037-020-00615-y

Lazari, E. C., Mylonas, C. C., Thomopoulou, G. E., Manou, E., Nastos, C., Kavantzas, N. et al. (2023a). Experiential Student Study Groups: Perspectives on Medical Education in the Post-Covid-19 Period. *BMC Medical Education, 23,* Article No. 42. https://doi.org/10.1186/s12909-023-04006-9

Lazari, E. et al. (2023b) Ethical Implications of Interactive and Experiential Medical Education. *Research & Reviews: Journal of Medical and Health Sciences, 12,* 1-2.

Lazari, E., Lazaris, A. C., Manou, E., Agrogiannis, G., Nastos, C., Pikoulis, E. et al. (2023). "Starting from the Image": A Tele-Pathology Pre-Graduate Course Aimed at Motivating Medical Students. *Medical Science Educator, 33,* 589-593. https://doi.org/10.1007/s40670-023-01770-7

Lazaris, A. C., Riccioni, O., Solomou, M., Nikolakopoulos, I., Vemmou, E., Karamaroudis, S. et al. (2015). Implementation of Experimental Learning in Pathology: Impact of HIPON Project Concept and Attainment. *International Archives of Medicine, 8,* 3-6. https://doi.org/10.3823/1810

Manou, E., Lazari, E. C., Thomopoulou, G. E., Agrogiannis, G., Kavantzas, N. G., & Lazaris, A. C. (2022a). Asynchronous E-Learning after Synchronous E-Learning in the Pathology Course. When Is the Proper Time for This Transition? *Journal of Education and Health Promotion, 11,* Article 200. https://doi.org/10.4103/jehp.jehp_1236_21

Manou, E., Lazari, E., Lazaris, A., Agrogiannis, G., Kavantzas, N. G., & Thomopoulou, G. (2022b). Evaluating E-Learning in the Pathology Course during the COVID-19 Pandemic. *Advances in Medical Education and Practice, 13,* 285-300. https://doi.org/10.2147/amep.s353935

Manou, E., Lazari, E., Thomopoulou, G., Agrogiannis, G., Kavantzas, N., & Lazaris, A. C. (2021). Participation and Interactivity in Synchronous E-Learning Pathology Course during the COVID-19 Pandemic. *Advances in Medical Education and Practice, 12,* 1081-1091. https://doi.org/10.2147/amep.s317854

Martinho, B., Ferreira, L., Koch, M. J., Madeira, F., Santos, E., Baptista, S. et al. (2023). Observational Study about the Impact of Simulation Training of Non-Technical Skills on Teamwork: Towards a Paradigm Shift in Undergraduate Medical Training. *Acta Médica Portuguesa, 37,* 83-89. https://doi.org/10.20344/amp.19021

Munneke, M. A. M., Eggermont, F., de Waal Malefijt, M. C., Vorstenbosch, M. A. T. M., Kooloos, J. G. M., & Tanck, E. (2019). Letting Go of Mandatory Presence during Laboratory Classes: Student's Behaviour and Opinions. *Creative Education, 10,* 2367-2373. https://doi.org/10.4236/ce.2019.1011168

Mylonas, C. C., Lazari, E. C., Menti, A., Manou, E., Kavantzas, N., Lazaris, A. C. et al. (2024). Preclinical Medical Education: Pathology through the Eyes of Experiential and Integrated Learning. *Discover Education, 3,* Article No. 273. https://doi.org/10.1007/s44217-024-00379-1

Oliveira, N. M., Viana, D. d. A., Santos, J. R., Quintanilha, L. F., de Jesus, R. F., Avena, K. d. M. et al. (2024). Engagement in Extracurricular Activities during Medical School: A Cross-Sectional Study on Student Motivations and Challenges. *Journal of Medical Education and Curricular Development, 11,* 1-11. https://doi.org/10.1177/23821205241296980

Palumbo, V. M. (2024). Clinical Simulation in Undergraduate Medical Training in the Clinical Simulation Laboratory (Lasic) of the Faculty of Medical Sciences, University of Buenos Aires: A Different Model for Learning Abilities and Skills. *International Journal of Research and Innovation in Social Science, VIII,* 5950-5962. https://doi.org/10.47772/ijriss.2024.803445s

Pesotskaya, E., Selyutina, L., Ivanova, M., & Voloshinova, M. (2021). Self-Organization as a Fundamental Factor in Sustainable Development and Operation of Continuing Professional Education. *E3S Web of Conferences, 291,* 05010. https://doi.org/10.1051/e3sconf/202129105010

Pokrajac, N., Roszczynialski, K. N., Rider, A., Poffenberger, C. M. C., Williams, S., Eakin, M. K. et al. (2022). The Osse: Development and Validation of an "Objective Structured Supervision Evaluation". *AEM Education and Training, 6,* e10784. https://doi.org/10.1002/aet2.10784

Riccioni, O., Vrasidas, C., Brcic, L., Armenski, G., Seiwerth, S., Smeets, A. et al. (2015). Acquiring Experience in Pathology Predominantly from What You See, Not from What You Read: The HIPON E-Learning Platform. *Advances in Medical Education and Practice, 6,* 439-445. https://doi.org/10.2147/amep.s79182

Rodriguez-Lara, M. I., Torres, C., Amaro-Gahete, F. J., Hernandez-Torres, F., Montero-Alonso, M. A., Núñez, M. I. et al. (2025). Exploring Absenteeism in Medical Education: Perceptions of Students and Professors at the University of Granada. *Medical Science Educator, 35,* 2861-2869. https://doi.org/10.1007/s40670-025-02482-w

Salaber, J. (2014). Facilitating Student Engagement and Collaboration in a Large Postgraduate Course Using Wiki-Based Activities. *The International Journal of Management Education, 12,* 115-126. https://doi.org/10.1016/j.ijme.2014.03.006

Song, P., & Tang, W. (2017) Emphasizing Humanities in Medical Education: Promoting the Integration of Medical Scientific Spirit and Medical Humanistic Spirit. *Biosci Trends, 11,* 128-133. https://doi.org/10.5582/bst.2017.01092

Vidic, N., Clark, R., & Claypool, E. (2015). Flipped Classroom Approach: Probability and Statistics Course for Engineers. In *2015 ASEE Annual Conference and Exposition Proceedings* (pp. 26.782.1-26.782.14). ASEE Conferences. https://doi.org/10.18260/p.24119

Yoon, S. A., Miller, K., Richman, T., Wendel, D., Schoenfeld, I., Anderson, E. et al. (2020). Encouraging Collaboration and Building Community in Online Asynchronous Professional Development: Designing for Social Capital. *International Journal of Computer-Supported Collaborative Learning, 15,* 351-371. https://doi.org/10.1007/s11412-020-09326-2

Young, O. M., & Parviainen, K. (2014). Training Obstetrics and Gynecology Residents to Be Effective Communicators in the Era of the 80-Hour Workweek: A Pilot Study. *BMC Research Notes, 7,* Article No. 455. https://doi.org/10.1186/1756-0500-7-455

Zabar, S., Adams, J., Kurland, S., Shaker-Brown, A., Porter, B., Horlick, M. et al. (2016). Charting a Key Competency Domain: Understanding Resident Physician Interprofes-

sional Collaboration (IPC) Skills. *Journal of General Internal Medicine, 31,* 846-853. https://doi.org/10.1007/s11606-016-3690-6

Zhou, D., Davitadze, M., Ooi, E., Ng, C. Y., Allison, I., Thomas, L. et al. (2023). Sustained Clinical Knowledge Improvements from Simulation Experiences with Simulation via Instant Messaging—Birmingham Advance. *Postgraduate Medical Journal, 99,* 25-31. https://doi.org/10.1093/postmj/qgac008