

P.46 RETHINKING SCIENCE TEACHING FOR THE 21ST CENTURY: A SWOT ANALYSIS OF A MULTI-STRATEGIC MODEL[†]

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[†] Presented at the 7th International Congress of CiiEM
Empowering One Health to Reduce Social Vulnerabilities, Almada, 2-4 July 2025

The rapid progress of scientific knowledge and the increasing professional demands in science-related fields require innovative educational approaches to be adopted. Traditional lecture-based teaching often fails to foster essential skills such as autonomy, critical thinking, and lifelong learning. The Integrated Multi-Strategy Teaching in Science (IMST) model addresses these needs by combining diverse, evidence-based teaching methodologies within a structured, student-centred framework. Originally developed for the pharmaceutical sciences, IMST promotes active learning through flipped classrooms, self-directed study, scenario-based activities, and peer assessment. It is designed to enhance not only knowledge acquisition but also key professional competencies relevant to 21st-century graduates. This study aims to introduce the IMST model and evaluate its implementation in a fourth-year pharmaceutical course (*Advanced Therapeutic Systems*), exploring its strengths, weaknesses, opportunities, and threats (SWOT) based on the perspectives of both students and professors. The analysis seeks to inform future refinements and support broader institutional adoption. The IMST model is structured around three pillars—knowledge, skills, and attitudes—and unfolds in three phases: pre-class, in-class, and post-class. Students engage with curated content, perform autonomous and collaborative tasks, and receive continuous formative feedback, including peer evaluations conducted via the Moodle Workshop tool. The final assignment is a group project, for which students propose a theme. The project is then refined in class and culminates in a presentation, an abstract and a scientific poster, as well as an individual oral discussion. Assessment is multi-faceted, including written, oral, peer-reviewed, and an Objective Structured Clinical/Practical Examination (OSCPE). An online survey using Mentimeter was conducted among 64 fourth-year pharmacy students (2024–2025 cohort) at the end of the course. The survey included 16 quantitative items (0–10 scale; voting outputs were invisible to participants) and open-ended questions addressing structure, effectiveness, engagement, and comparison with traditional approaches. Independent reflections were also gathered from the two faculty members. Both qualitative and quantitative data were analysed using a SWOT framework. The survey had a 96.9% response rate, and students reported meaningful gains in research (7.56), communication (6.87), critical thinking (7.10), and responsibility for learning (7.11). However, the model was also perceived as demanding in terms of time (8.35), with only moderate enjoyment (6.52) and enthusiasm for study (5.81). Open responses emphasized the desire for more in-class work time and improved scheduling of tasks. Faculty reflections acknowledged the model's pedagogical value but highlighted implementation challenges, including workload intensity, scalability issues, and difficulties supporting students with limited autonomy or English language proficiency. The SWOT analysis revealed strong alignment in recognizing the model's strengths and critical divergences regarding logistical constraints and sustainability concerns. The IMST model demonstrates significant potential for developing critical scientific and professional skills in higher education. Students and faculty appreciate its relevance, integrative structure, and active learning focus. Nonetheless, to ensure sustainability and wider applicability, structural adjustments are needed—particularly regarding workload management, digital tool optimization, and motivational strategies. Addressing these barriers is crucial to scaling IMST within science curricula and supporting inclusive, engaging, and skill-oriented learning environments.

Keywords: ACTIVE LEARNING; SCIENCE EDUCATION; PEDAGOGICAL INNOVATION; STUDENT-CENTRED LEARNING; SWOT ANALYSIS