

An ancient foe within neurosciences education

Un antiguo enemigo dentro de la educación de las neurociencias

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Neuroscience has seen remarkable growth over the past century, but its teaching and communication has not kept pace. “Old” or “traditional” does not necessarily mean useless. In fact, some educational strategies have endured because of their effectiveness. However, education is a dynamic and evolving process that needs a review of its principles based on current needs and future health demands¹.

Many neuroscience educators still rely on empirical educational strategies, not unlike the early 20th century *flexnerian* tutorial models². Despite their depth of knowledge in their respective fields, they had limited exposure to teaching training. The multifaceted roles that come with being a medical educator are also something doctors are often not adequately prepared for.

Neuroscience has greatly influenced the fundamental basis of educational theory, creating a symbiotic relationship that benefits both fields. However, “neuromyths” are not only a concern for educators outside of neuroscience; they are also deeply ingrained in daily teaching activities within neuroscience medical residencies^{1,3}, for example, the role of the faculty member, often viewed as a “professional model,” is frequently underrated by resident physicians as a significant learning facilitator⁴.

From a contemporary perspective, an effective medical educator continuously evaluates the quality of learning experiences. They establish a realistic link between clinical scenarios and learning needs, always striving to innovate and improve⁵. This role is fueled by thoughtful reflection, enthusiasm, creativity, and

evidence-based practice across various tasks and activities⁶. However, results rely heavily on an effective faculty development program.

In Mexico, most neurosciences faculty programs lack staff who have received formal university-level education training. As a result, the task of education relies on highly motivated clinicians who share their vast knowledge and clinical experience; yet, their lack of formal educational training makes it challenging for them to identify missed opportunities, leading to a significant absence of educational innovation projects⁷.

Faculty development activities aim to improve the skills of medical educators at all levels. Although the focus of these activities is on improving teaching and instruction, they should also address other key roles of medical educators, such as curriculum design, pedagogical leadership, and scholarship granting⁶. Most faculty development programs are typically carried out separately from a professor’s curriculum⁸. They are generally created based on identified or self-perceived needs or even empirical process: “*doing things as they have always been done*”. Mastering complex skills, like the neurological exam, demands a thoughtful approach that is far beyond empirical approaches. Ensuring the use of effective teaching methods is crucial for facilitating deep learning in the future doctors.

The BEME study showed that faculty development positively impacts teaching quality. Participants indicated heightened satisfaction and confidence, acquired new skills, and gained a clearer grasp of effective strategies.

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This led to changes in teaching behavior and sparked new educational initiatives². Successful initiatives typically featured evidence-based design, pertinent content, feedback, educational projects, community building, a long-term design strategy, and support from the institution^{2,5}.

The push for accountability in medical education is gaining momentum, largely driven by the emergence and expansion of generative artificial intelligence^{4,9}. Given the increasing complexity of neuroscience and its interconnection with other scientific fields, along with the standardization of medical education globally, the need for professional development among medical educators is becoming more apparent. This is a significant responsibility that rests on educational and health institutions. To defeat this old foe within neuroscience teaching requires us to foster faculty development through both formal and informal strategies⁶.

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