Scientific disciplines such as physiology and biochemistry are often perceived by students as "dry" or conceptually overwhelming. These subjects require mastery of complex terminology, abstract biochemical pathways, and intricate physiological mechanisms. Such cognitive demands may increase student anxiety and reduce classroom participation. In this context, humor emerges as a pedagogical strategy that can help counteract emotional and cognitive barriers to learning.

Both pedagogical research and classroom experience suggest that humor can reduce anxiety surrounding difficult material while increasing student engagement and sustained attention (1). When used as a study strategy, humor may also strengthen memory retention through emotional tagging. Importantly, humor humanizes both the instructor and the scientific content, helping to create a psychologically safe environment in which students feel more comfortable asking questions. For instructors teaching demanding foundational courses, fostering such an environment is particularly important.

In my teaching, humor is not used as entertainment detached from academic content, but rather as an interpretative layer that reframes complex biological processes. These humorous framings serve as cognitive anchors that students can later recall when reconstructing scientific mechanisms. For example, it is often easier to remember the roles of coenzymes in a metabolic pathway when they are conceptualized as cars rather than as abstract metabolic intermediates. Mental exercises such as these help students connect complex concepts and retain important details.

Student feedback indicates that integrating humor positively influences both classroom atmosphere and the overall learning experience. By reducing the intimidation associated with complex material, humor appears to lower the threshold for asking questions and participating in discussions. Importantly, humor does not replace academic rigor. Rather, it functions as an entry point into demanding content, supporting, rather than diluting, intellectual depth.

When used intentionally and aligned with learning objectives, humor can be a powerful tool in scientific education. In foundational disciplines often perceived as "dry," humor can facilitate engagement, deepen understanding, and foster a more inclusive learning environment.

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1. Banas, J. A., Dunbar, N., Rodriguez, D., & Liu, S. J. (2011). A review of humor in educational settings: Four decades of research. *Communication Education, 60*(1), 115–144. https://doi.org/10.1080/03634523.2010.496867