

Building Bridges, Not Beaker Walls: Digital Learning Communities for Inclusive Chemistry Education

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Abstract:

In this seminar, I would like to share lessons from several educational studies that were conducted during the Covid-19 pandemic.

While technology-powered education thrives in our interconnected world, the irony lies in its primary challenge: the social dimension. Current digital methods, though promising, suffer from diminished student-faculty interactions (lack of non-verbal cues, slow response times) and hampered peer connections, hindering collaboration and impacting mental well-being. These effects disproportionately burden students from diverse backgrounds, widening educational inequalities.

Our solution? Building vibrant learning communities within existing popular digital platforms, a simple and cost-effective method. To illustrate, I'll introduce ChemPOV, a Singapore-made multi-player board game playable on digital platforms. This innovative tool gamifies retrosynthetic thinking and analysis, enriching the learning experience for chemistry students.

Professional Biography

Fun Man Fung, Ph.D. graduated from National University of Singapore (NUS) and Technische Universität München. He teaches and researches at the Department of Chemistry at NUS. Dr Fung is a YSEALI Professional Fellow (2019) hosted by the Mansfield Center at the University of Montana. Honors and awards include Thieme Chemistry Journals Award (2024), NUS High Inspiring Research Mentor Award (2023); Xilong Scientific-SNIC Industry Award in Chemistry Education (2021); CAS Future Leaders Program (2020); Asian Universities Alliance Scholars Award Program (2020) at Peking University; IAS@NTU-SNIC Chemistry National Meeting Singapore Award for Chemical Education (2020), and D2L Innovation Award in Teaching and Learning (2019).

Dr Fung is the lead co-editor of two books. The first, titled "10 Things You Must Know About the International Chemistry Olympiad (IChO)," published by World Scientific, serves as a comprehensive guide to this competition. The second, "Technology-Enabled Blended Learning Experiences for Chemistry Education and Outreach," published by Elsevier, serves as a resource for educators and researchers seeking to incorporate technology into STEAM education and its impact on fostering engaging learning experiences.

Since 2021, he has been serving on the Editorial Advisory Board for the Journal of Chemical Education, a publication of the American Chemical Society.

In 2022, Dr Fung was elected as a council member of the Singapore National Institute of Chemistry (SNIC). He has represented SNIC on the IUPAC Committee on Chemistry Education since 2020.

