**UNE L&T Symposium 2024 – Presentation Synopsis**

**1. Title of Presentation:**

Using Gamified Lessons to Challenge Disengagement in First-year Chemistry Students.

**2. Presenter(s) Name(s) and Affiliation(s):**

Dr Siew Chong SABL   
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**3. Main Takeaways:**

***Takeaway 1:*** *The implementation of gamified lessons in CHEM100 significantly improved student engagement and understanding of introductory Chemistry, evident by positive feedback and enhanced exam performance.*

***Takeaway 2:*** *These interactive tools support active knowledge construction, promoting deeper comprehension and application skills.*

**4. Application in Educational Contexts:**

***Teaching Methods:***

- *The interactive lessons can be used within a blended learning framework, combining digital resources with face-to-face interactions.*

- *The interactive lessons can be used in collaborative learning activities to facilitate group discussions and peer teaching moments around lesson content to deepen understanding and retention*.

**Assessment:**

*–The embedded granular feedback within the interactive lessons provides an opportunity for these lessons to be used a formative assessment helping both students and educators identify learning progress and gaps.*

- *The usage data and performance analytics from the lessons can inform formative and summative assessments, providing insights into student engagement and understanding.*

**Student Engagement:**

- *Gamified methods make learning more interactive, addressing diverse learning styles and increasing student motivation and engagement through the use of interactive content such as animated lessons and games to make difficult concepts more accessible and engaging.*

- *Collaborative or competitive elements can be incorporated into lessons to foster teamwork and healthy competition among students.*

**Curriculum Development:**

- *Use these interactive lessons to explicitly support course learning outcomes, ensuring alignment between activities and assessment.*

- *Standalone modules can be developed to target specific learning objectives, which can be easily inserted into existing courses or programs.*

**5. Valuable Sources and References:**

**Source 1:** *Andronicos, N. M.; Barnett, T. J.; Roberts, R.; Chong, S.; Labeur, L.; Henderson, S. M.; Burns, A. “Gamified lessons support molecular genetics education of first year biology students during COVID-19 lockdown.”* *ASCILITE 2021: Back to the Future. DOI:10.14742/ascilite2021.0137 – Gamified lessons improved student success in biology courses pre- and during COVID-19, but lesson fatigue highlights the need for careful curriculum design.*

**Source 2:** *Pettit, R.K., McCoy, L., Kinney, M. et al. Student perceptions of gamified audience response system interactions in large group lectures and via lecture capture technology. BMC Med Educ 15, 92 (2015). DOI:10.1186/s12909-015-0373-7* – *Gamified lessons increased student engagement, motivation, and interest, but variety and approach are crucial to maintain effectiveness and prevent fatigue.*

**6. Weakness and Area for Future Research:**

**Weakness:** *Lesson fatigue can be seen in modules with multiple consecutive interactive lessons that are similar in format.*

**Future Research:** *To address lesson fatigue, future research could explore optimal instructional design strategies, such as varying activity formats, integrating periodic summative assessments, and spacing interactive lessons over time, to maintain student engagement and prevent burnout. Additionally, student feedback and analytics can be incorporated to personalize and adapt lesson difficulty, pacing, and content, ensuring that interactive lessons remain challenging yet manageable.*