Development of an Interactive Human Body Digital Reusable Learning Object (RLO) to Provide Whole Body Systems-Based Learning in Vitamins and Minerals

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Objectives for the Session
• Define what is meant by a reusable learning object (RLO) and the application to student teaching and learning at the university level.
• Understand how an RLO is developed for the use of undergraduate and graduate teaching of vitamins and minerals.
• Recognize the different types of student learners as well as the student interest and utility of digital objects in online learning.

Rationale
• University teaching and textbook instruction of micronutrients (vitamins and minerals) has been limited to a nutrient by nutrient approach, yet, micronutrients have complex interactions with multiple body systems.
• Accompanying visuals, text and interactive learning may provide higher material understanding and retention in nutrition/micronutrient classes.
• To fill this gap, a freely accessible and reusable digital learning object (RLO) was developed to explore a systems-based teaching approach to the teaching of micronutrients.

Methods
• Computer usage, learning styles and content knowledge were assessed in undergraduate/graduate students enrolled in a micronutrients course at Virginia Tech, JMU and GMU unexposed (control) to the RLO in 2015 and exposed in 2016. Results presented are for the control group only.
• Students’ learning styles determined based on Kolb’s Learning Style Inventory (Manolis et al., Learn Individ Differ 2013).
• Standard Likert scale assessed interest in using digital simulations and perceived use of the RLO.
• Graded questions on the skeletal system used to demonstrate understanding of a key nutritional concept.

Lessons Learned and Future Directions
• Students want a fun site to explain course material.
• Building the RLO requires money, time and a team approach which integrates content experts, instructional, graphic and web designers, database and programmers, legal/copyright experts.
• Future updates are planned to expand the RLO to other body systems.

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