

Dec. 9 is the new drop date for Fall.

The Orionids meteor shower peaks on Nov. 28...look for it!

BIOBEAT

Nov. 24, 2020

Nov. 18 was the International day of LGBTQ+ in STEM... yes, it's a week late, but still important to acknowledge!

Teaching and Learning Research

This week, let's introduce a type of research called the Scholarship of Teaching and Learning (SoTL). Here's Dr. Michelle Yeo, the Director of the Centre for SoTL, to explain what SoTL is.

"The Scholarship of Teaching and Learning is research about students' learning and how we can best teach. SoTL focuses primarily on learning at universities and colleges. It can be done by researchers from any discipline - historians, scientists, business professors... anyone curious about problems they or their students encounter, and interested in doing systematic inquiry to get answers and find better ways to teach."

Dr. Tonya Mousseau and Dr. Nick Strzalkowski received grants to pursue two SoTL research projects to study how making mistakes can help you learn, and how to enhance scientific literacy.

Dr. Tonya Mousseau:

The purpose of my study is to help students enhance resilience and learn from mistakes. Learning complex subject matter takes hard work and practice. Sometimes we make mistakes. Sometimes we fail. But making mistakes and correcting them is a powerful way to learn. However, knowing you're wrong isn't enough - you need to reflect on the feedback to integrate that information into memory and improve performance. Therefore, students will collaborate and reflect on their errors to see if it helps them learn.

Focusing on your errors is challenging but it can enhance metacognition (the ability to think about your thinking), increase self-efficacy (a belief in your capability to accomplish a task) and improve resilience. Students who are more resilient after making mistakes have higher self-esteem, lower levels of perfectionism, and a more positive way of explaining past events (e.g., I failed the test, but I can study



harder next time). Embracing failure in the classroom is teaching a new level of kindness to ourselves and others as we acknowledge our humanity, full of both capabilities and limitations.

Dr. Nick Strzalkowski:

At Mount Royal University we are proud to provide our students a general, liberal arts education. As an educator, scientist, and citizen, I am very interested and invested in the "Science Literacy, Attitudes, and Engagement of Undergraduate Students" - which is the title of my SoTL research project! Science literacy offers knowledge and skills to navigate this increasingly complex world of ours, which is valuable for both scientists and non-scientists. Your belief in astrology is misguided but fairly harmless, while denial in the efficacy of vaccines or human caused climate change can (will) have disastrous consequences for yourself, your community and society at large. In collaboration with Dr. Mandy Sobhanzadeh (GNED instructor and head of Cluster 1), we are using questionnaires and interviews to ask first and fourth year students about their science literacy, and their attitudes about and engagement with science. This work will provide insights and recommendations for our local MRU community, while contributing to a growing body of science education literature. Be proud of your science literacy and never stop learning!

Random Science: Want to read about aggressive, hungry, angry (hangry?) caterpillars? Of course you do. Read it [here](#).