

# Educational Research Grant Recipients

## 2019 Recipients

### **Exploring Education on Intellectual & Development Disabilities in Canadian Occupational Therapy Curricula: A Mixed Methods Investigation**

*Nicole Bobbette, School of Rehabilitation Therapy*

Education plays a critical role in creating an inclusive and just society for all citizens. A lack of education for health professionals has been identified as one reason for the ongoing health inequities experienced by individuals with intellectual and developmental disabilities (IDD). Currently little is known regarding the extent of occupational therapy student education and training on this population.

### **Perspectives, Attitudes and Beliefs about Simulation for Assessment in Postgraduate Medical Education**

*James Ahlin, Department of Emergency Medicine; Melanie Walker, Department of Emergency Medicine; Kyla Caners, McMaster University; and Andrew Hall, Department of Emergency Medicine*

Competency based medical education (CBME) is currently being implemented both at Queen's and nationwide across all postgraduate medical training programs. It is clear that simulation will be an essential part of competency-based assessment given the rare nature and high patient risk of certain clinical scenarios or procedures. Unfortunately, what is less clear is the current landscape of perspectives, attitudes and beliefs on simulation for assessment among both learners and faculty. Some stakeholders have expressed concerns in private or informal discussions about this use of simulation, which has been traditionally touted as a safe space for learning. However, these voices are not currently expressed within the literature on simulation-based assessment. Our study aims to fill this current knowledge gap. This is essential to the appropriate integration of simulation into assessment in medical education that is acceptable for all involved. Furthermore, this is the base for the creation of a safe, reliable and valid assessment space.

### **Cracking the Correction Mode: Assessing the Effectiveness of Feedback Strategies for Improving Student Writing in the Second Language Classroom and Beyond**

*Michael Reyes, Department of French Studies; and Francesca Fiore, Department of French Studies*

The Department of French Studies recently introduced a series of reforms for improving the grammatical accuracy and overall quality of student writing. However, despite implementing a common framework for providing more feedback on writing across all courses, instructors do not know what kinds of feedback will improve learning outcomes. This project explores the effectiveness of different kinds of corrective feedback on student writing, both in the scholarly literature and in our second-year composition course. By doing so, this research project empowers instructors and staff with strategies for developing the writing skills of second language learners and international students at Queen's.

## **2018 Recipients**

### **Student Learning and Behaviour in Physics Confirmation Versus Guided-Inquiry Labs**

*Dr. Bei Cai, Adjunct Professor and Dr. Alastair McLean, Professor Department of Physics, Engineering Physics and Astronomy; and Lindsay Mainhood, PhD Candidate, Faculty of Education*

There is increasing awareness of the importance of the laboratory experience in physics instruction. In confirmation-inquiry labs, student experience is reduced to merely following prescribed instructions. The educational trend is to provide guided-inquiry labs, experiences in which students are given opportunities to design their own experimental procedures. However, limited physics education research exists on upper-year lab curriculum development and assessment. Our research focuses on studying the differences of student learning and behavior in a confirmation-inquiry versus guided-inquiry lab experiment in our second-year physics lab course. The findings will help motivate and guide the improvement of lab instructions.

### **Minding the Gap: Navigating the disparity between doctoral training and professional expectations of teachers of geography in higher education**

*John Haffner, PhD Candidate, Department of Geography and Planning; Sandra McCubbin, PhD Candidate, Department of Geography and Planning*

Teaching experience and evidence of teaching effectiveness are now nearly universal requirements for academic positions in geography; yet teaching development in the form of courses, opportunities, and/or mentorship do not feature in many, if any, geography PhD programs. This research explores how doctoral students experience and navigate the disparity between professional teaching expectations and doctoral training in order to expose the implications for students and the discipline and to identify possibilities for change. The research contributes to the scholarship of teaching and learning in Geography and identifies opportunities to renegotiate how geographers-in-training are prepared to teach.

### **Developing a model for academic writing support considering the perspectives of doctoral students and their supervisors at Queen's University**

*Shikha Gupta, PhD Candidate, School of Rehabilitation Therapy; Jyoti Kotecha, Adjunct Professor, Department of Family Medicine; Associate Director, Research & Business Development, Beaty Water Research Centre; and Past Director, Queen's University International Centre.*

Queen's University identifies academic writing as one of the core learning outcomes for its graduate students. However, many graduate students, especially those having English as an additional language, face numerous challenges in scholarly writing. Similarly, academic mentors who supervise graduate students can spend an inordinate amount of time reviewing and editing multiple drafts for grammatical and compositional matters. Therefore, we propose to explore the multiple challenges in academic writing faced by graduate students and faculty supervisors at Queen's University. In doing so, our endeavor is to identify key strategies to students, supervisors, and those who support students and faculty towards success in academic writing.

## **How should we correct mistakes in the speech of foreign language learners? Assessing the training of Undergraduate Teaching Assistants in effective feedback strategies.**

*Dr. Michael Reyes, Assistant Professor of Francophone Studies, Department of French Studies*

The introductory course in the Department of French Studies uses fourth-year undergraduate teaching assistants (UTAs) to provide first-year students with speaking practice in small group tutorials. In recent years, however, students have expressed dissatisfaction with the quality of feedback that they received on speaking from their UTA. For this study, I will research the effectiveness of different strategies for providing feedback and train UTAs in practices supported by this literature. I will then assess the effectiveness of this training on student perceptions of feedback they received from their UTA and determine if the feedback improved students' speaking skills.

## **2017 Recipients**

### **Feasibility and Learning Outcomes Associated with Preparing Nursing Students for Simulation using Virtual Gaming Simulations**

*Marian Luctkar-Flude and Deborah Tregunno, School of Nursing; Jane Tyerman, Trent-Fleming, School of Nursing; and Rylan Egan, Office of Health Sciences Education*

Simulation-based education in nursing contributes to better knowledge, skills, confidence and critical thinking, and supports learning of patient safety competencies. Pre-simulation preparation is a critical component of simulation learning that has not been well-studied. This novel quasi-randomized controlled observational study will evaluate traditional pre-simulation preparation in comparison to blended delivery that includes virtual simulation games on nursing students' ability to achieve learning outcomes. It is expected that virtual simulation games will prove to be feasible, and more engaging than traditional pre-simulation preparation activities, resulting in better learner preparation, decreased anxiety, increased knowledge and improved performance during live simulations.

### **Identifying Threshold Concepts in the Academic Study of Religion**

*Sharday Mosurinjohn and Richard Ascough, School of Religion*

Threshold concepts are critical to the formation of scholarly identity within any given discipline. Although much work has been done in this area in many disciplines, this is not the case for religious studies, where as recently as 2014 Patricia Killen noted a desideratum for such research to be undertaken. In order to begin addressing the core question of what are the threshold concepts in religious studies, we are proposing a small-scale study of Queen's students in Religious Studies classes with a foray into the wider guild to lay the groundwork for a much larger study across North America.

### **Assessing the Effects of the New Requirements in Music History and Culture on Student Perceptions of Music and Music History in Global Perspective**

*Margaret E. Walker, Dan School of Drama and Music*

The new music history and culture required curriculum at the Dan School of Drama and Music places music history in a much larger historical, geographical, and artistic context than is common in standard Bachelor of Music curricula. This study seeks to evaluate the effects of the new core courses on student

perceptions of music and music history in global context, including their awareness of issues such as ethnocentrism and cultural relativism. In addition to scholarly dissemination, the data gathered through this study will be used to revise and adjust the new courses as the curriculum goes into its second year.

### **Evaluation of the Quality Improvement Practical Experience Program: An Innovative Approach to Quality Improvement and Patient Safety Education**

*Akshay Rajaram and Anna Curry, Undergraduate Medical Education*

Despite rapid growth in the field of healthcare quality improvement (QI), early interprofessional education in QI and patient safety (PS) has remained relatively underdeveloped and separated from core health professions curricula. The QI Practical Experience Program (QIPEP) is designed to enhance the PS and QI competencies of participating interprofessional students. Using a mixed methods approach, this evaluation will assess the effects of QIPEP involvement on changes in attitudes, knowledge, and skills related to PS and QI and identify the optimal project and task characteristics that enhance PS and QI learning.

### **2016 Recipients**

#### **Faculty Winner: Designing Effective Multiple-Choice Questions for Assessing Higher-Order Cognitive Skills in Anatomy**

*Dr. Les Mackenzie, Department of Biomedical and Molecular Sciences*

Multiple-choice questions (MCQs) are frequently used as a method of both formative and summative assessment in anatomical sciences. Although there are some general suggestions around the format, structure, validity, and reliability of MCQs, there is a lack of evidence-based guidelines on writing effective questions for assessing higher-order cognitive skills in the context of anatomy. Appropriately constructed MCQs when aligned with learning outcomes and triangulated with other methods of assessments can be an efficient and powerful strategy for assessing student learning. This research will use think-aloud protocol to develop design recommendations, and discuss implications for the use of MCQs in assessing higher-order cognitive skills in anatomical sciences.

#### **Student Winner: Exploring the Experiential Dimension of Sustainability Courses**

*Cassandra Kuyvenhoven and Peter Graham, School of Environmental Studies*

The goal of sustainability challenges many implicit assumptions and conventional wisdoms about what education is and does. Sustainability courses may actually be counterproductive when they fail to examine and account for underlying epistemological and ontological (cultural) assumptions, as evidenced in both explicit learning outcome goals and implicit hidden curricula. Phenomenographic research on courses designed to provide students with competencies in sustainability can tell us how students experience these subtle and sometimes subconscious contradictory messages. This research makes an important contribution to both the literature on Education for Sustainable Development, but perhaps even more importantly the philosophy of education literature.

## **2015 Recipients**

### **Evaluating Deteriorating Patient Clinical Simulations for Undergraduate Nursing Students: Reliability and validity of scenario-specific learning outcome assessment rubrics versus generic assessment rubrics**

*Marian Luctkar-Flude, School of Nursing*

Well-designed clinical simulations may enhance nursing student critical thinking and better prepare them to recognize and manage deteriorating patient situations. However, there is a need for reliable and valid assessment methods to determine whether simulation learning outcomes have been met. This mixed-methods study will (i) compare reliability and validity data for two scenario-specific outcome-based assessment rubrics versus two generic assessment rubrics; and (ii) describe instructor and learner satisfaction. Integration of learning outcomes and assessment rubrics into simulation design will enhance our ability to evaluate the contribution of clinical simulation to better prepare our nursing graduates for the transition to practice.

### **Medical Information Literacy: A Longitudinal Program Evaluations**

*Suzanne Maranda, Bracken Health Sciences Library*

Do Queen's University medical students graduate with more information literacy than their counterparts at other universities? Do they continue using the knowledge and skills learned in the first two years of medical school during their hospital rotations? By the end of their program, have they adopted life-long learning skills and attitudes that will serve them well for their professional careers? Are they reaching the required competencies of the Medical Council of Canada Scholars' Role? The answers to these questions would help librarians enhance their medical information literacy program. The results of this research would also be applicable to other information literacy programs at Queen's or at other universities.

### **Exploring Transformative Learning in the Context of Community Service-Learning: Characterizing Time-Framed Interpersonal Growth Profiles as they Relate to "Disorienting Dilemmas" of Service Learning**

*Janette Leroux, Kinesiology and Health Studies*

Community service-learning (CSL) is a pedagogical approach that brings learning outside of the classroom. While CSL is believed to hold unique and potentially transformative learning (TL) possibilities, it is unclear theoretically and pedagogically what constitutes and fosters TL in CSL practice. The current research will explore the nature of the TL experience in response to "disorienting dilemmas" as documented through content analysis of bi-weekly service-learning reflection logs, within the context of a full-year, upper-year health studies course that features a CSL component. Characterizing the different time-framed perspective transformation of students will allow more for purposeful design of transformative service-learning pedagogy.

### **Science in the Art Conservation Curriculum: Determining the Threshold Concepts, Teaching Strategies for Professors, and Learning Approaches for Students**

*Alison Murray, Art Conservation*

In the science curriculum for training art conservation students, learning outcomes at specific levels of knowledge are already established, but new forms of engagement are needed to increase student achievement. Determining the threshold concepts for the science component of the curriculum is important, as is ascertaining evidence-based teaching and learning strategies. Science professors in similar programs across North America and Queen's University art conservation master's students will take part in this study through questionnaires and focus groups. The goal is to improve teaching and learning by identifying challenging learning content and exploring how this content is best learned.