Canadian Association of Physicists
Association canadienne des physiciens et physiciennes

Contribution ID: **13** Type: **Oral Competition (Graduate Student) / Compétition orale (Étudiant(e) du 2e ou 3e cycle)**

Comparison of the experiences of Female and Male Students in taking Labatorials

Monday 9 June 2025 15:00 (15 minutes)

Labatorials (combination of "lab"and "tutorial") developed at the University of Calgary were inspired by the introductory physics tutorial system entitled 'Tutorials in Introductory Physics'at the University of Washington. Students doing Labatorials typically use worksheets with several suitable activities for the duration of the lab session. The worksheets ask students to run calculations, plot graphs and do experiments, they can also include instructions for experiments and computer simulations Labatorials use pre-understanding-targeting worksheets similar in structure to those in tutorials, except with additional emphasis on experiments. Students are assigned to groups of 3 or 4 members and provided with conceptual questions and asked to make predictions.

It has been shown "that female students with A's have similar physics self-efficacy as male students with C's in introductory courses. Moreover there is a continuing low percentage of women in science and engineering. Despite some efforts progress has been slow.

Kalman, La Braca, & Sobhanzadeh, (2020) noted that in performing Labatorials, there were indications that beyond simply working together for the purpose of completing the lab, both male and female students have found reassurance in knowing that they were going through similar struggles, helping them feel comfortable in sharing their doubts and feeling relatively relaxed despite the challenges of the labatorials.

We present preliminary results on a study to see if indeed women students have the same experiences as male students when they undertake Labatorials. Using a mixed-methods approach, this study collects qualitative and quantitative data, including pre-tests, post-tests, reflective writing assignments, interviews, and teaching assistant feedback. The research is conducted at Concordia University in Montreal and Mount Royal University in Calgary, with student groups composed of mixed genders to foster peer collaboration and inclusive learning.

Keyword-1

Tutorial and Laboratory Instru

Keyword-2

New Developments in Physics

Keyword-3

Authors: Ms LACHANCE, Lydie (PhD student); Dr SOBHANZEDAH, Mandana (Associate Professor)

Co-author: KALMAN, Calvin

Presenter: Ms LACHANCE, Lydie (PhD student)

Session Classification: (DPE) M2-7 Physics Education I | l'enseignement de la physique I (DEP)

Track Classification: Technical Sessions / Sessions techniques: Physics Education / Enseignement de la physique (DPE-DEP)