



Study of the Impact of Optional Anatomy Laboratories on the Education of Health Science and Medical Students.

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Claudia Meloche, Mina Zeroual (M.D.), Michel Désilets (Ph.D.)*
Department of Cellular and Molecular Medicine, University of Ottawa
Ottawa, ON, K1N 6N5, cmelo069@uottawa.ca

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Introduction

- It is well established that experimentation is the stimulus and the foundation for learning (Boud, Cohen, & Walker, 1993).
- In the context of human anatomy, it has been demonstrated that experiential learning, whereby students can visualize and manipulate real human specimens, enhances their comprehension and retention of the anatomical structures (Gunderman & Wilson, 2005).
- Near-peer teaching in the field of health sciences generally has been shown to have a positive impact on the learning process of students (Evans & Cuffe, 2009).

Objectives:

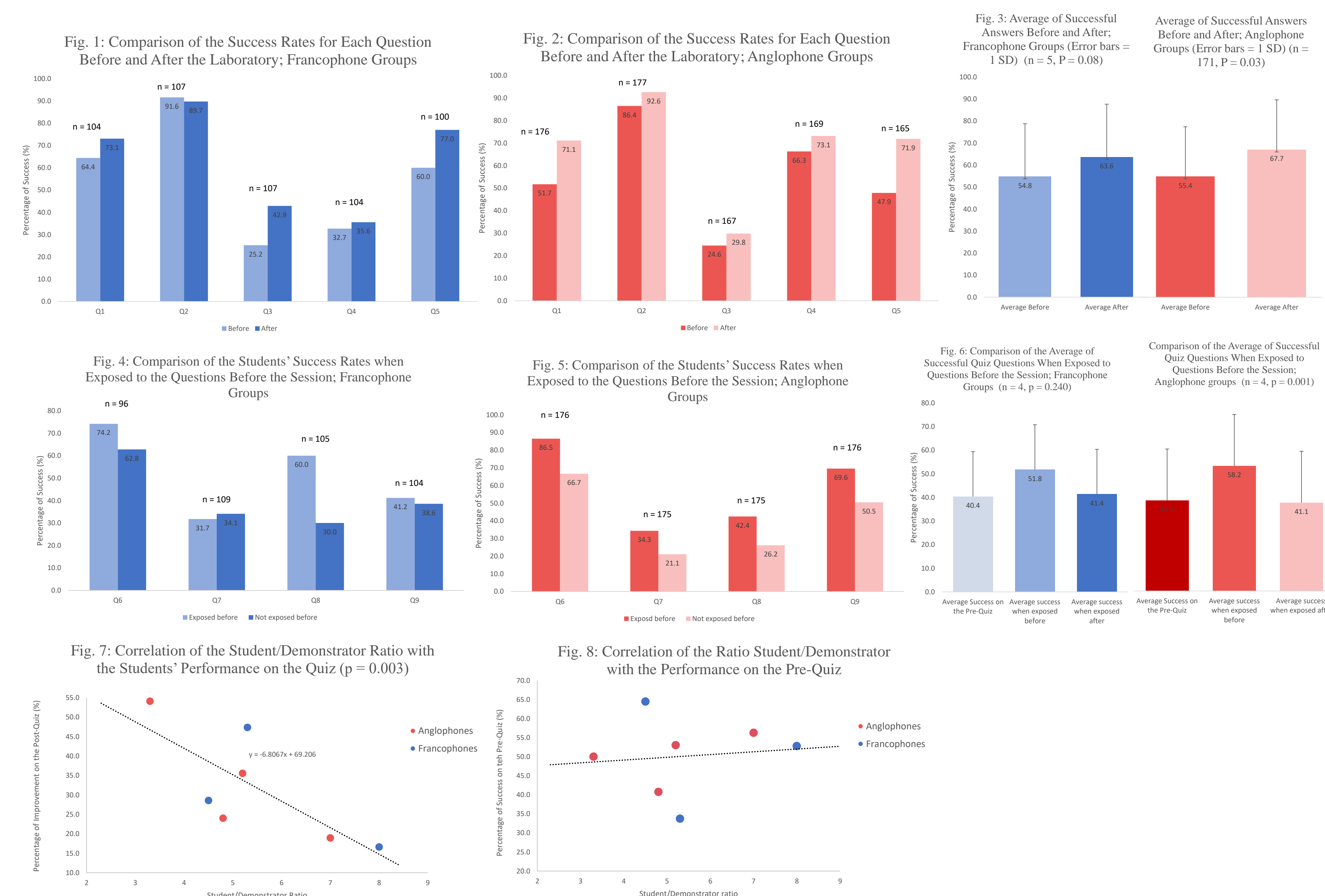
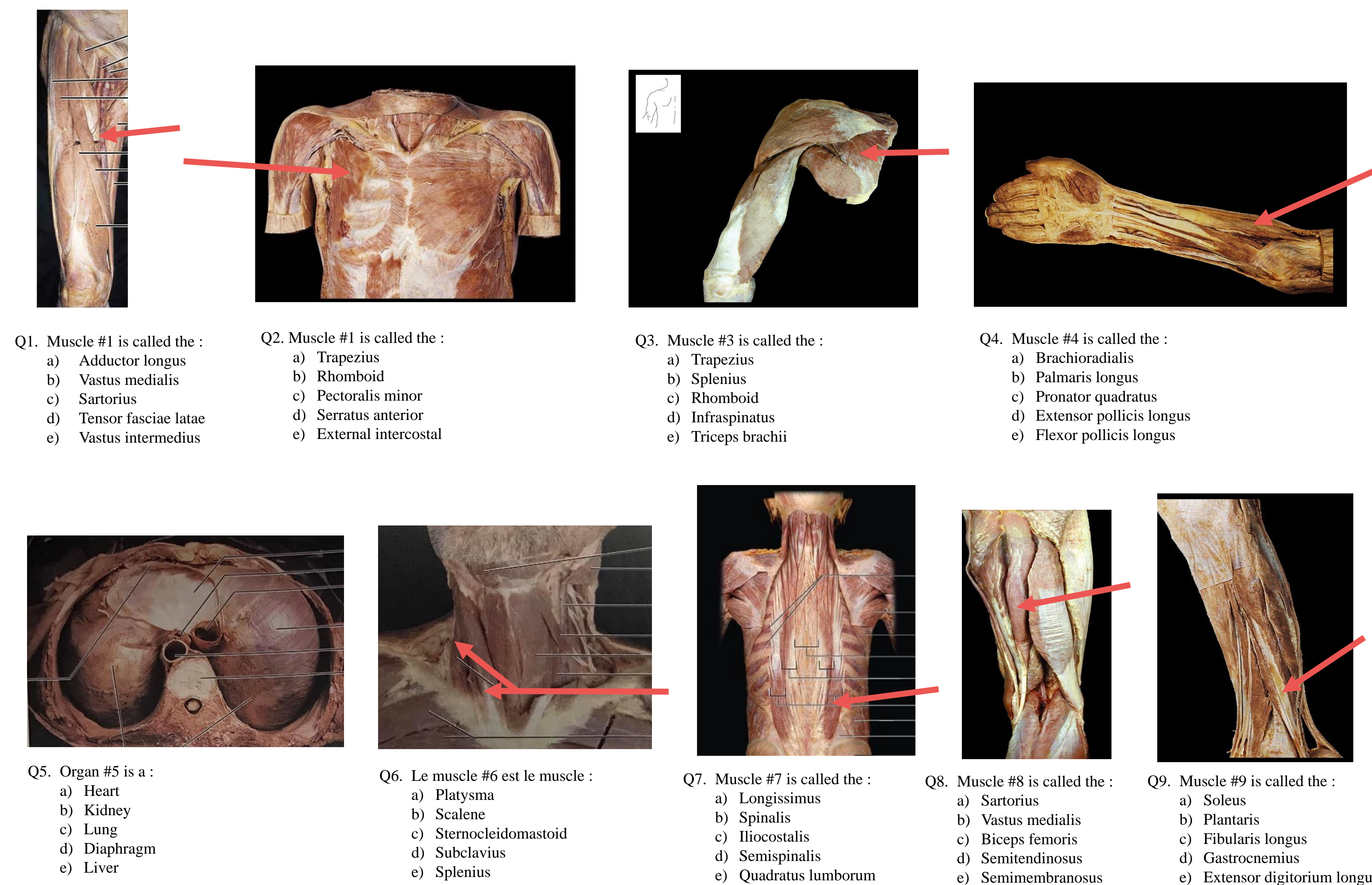
- To analyse the impact of the combination of experiential learning and near-peer teaching during optional human anatomy laboratory sessions offered to ANP1106/1506 students and presented by medical students.
- To evaluate the immediate impact of these sessions on the consolidation of their knowledge of human anatomy.
- To assess the effect of group sizes on the students' performance with the tests
- To compare the success rate of the anglophones on their learning with that of the francophones.

Materials and Methods

- 10 optional 1.5 hour sessions were offered over the course of 2 weeks.
- Each session was focused on the musculoskeletal anatomy and was held in the Faculty of Medicine's human anatomy laboratory.
- Human cadaver specimens exposing various anatomical structures from the torso, back, and limbs were presented.
- The structures were presented by first and second year medical students, who had access to a "checklist" comprised of the necessary anatomical structures to present.
- A short multiple choice quiz composed of 7 muscles to identify was administered to the students before the laboratory (see "Results" section). The questions were answered anonymously.
- The same quiz was administered again at the end of the lab session and the students were asked to correct their colleagues' quiz using the knowledge acquired during the session.
- An additional two questions (questions 8 and 9) were also added to test whether the exposure to the pre-quiz had a significant impact on the results obtained on the post quiz.
- Between the 2 weeks, questions 6 and 7 were permuted with questions 8 and 9 to control for the level of difficulty of the questions.

Group of Students	Total	Participants	Percent Participation (%)
ANP1106 anglophones	932	277	30
ANP1506 francophones	353	135	38
1 st year medicine anglophones	120	16	13
2 nd year medicine anglophones	120	3	3
1 st year medicine francophones	45	13	29
2 nd year medicine francophones	45	1	2

Results



Conclusion

- Overall, there is a significant improvement between the scores on the quiz before the laboratory session and after (Fig. 1 to 3).
- There was no significant difference between the francophone and anglophone students (Fig. 3), the average success rate being similar for the pre-quiz (54.8 ± 26.6 for francophones and 55.4 ± 22.9 for anglophones) and the post quiz (63.6 ± 23.3 for francophones and 67.7 ± 23 for the anglophones).
- There is a significant correlation between the ratios of students/demonstrator and the success of the ANP students, with an estimated 6% decrease for every student added to the group (Fig. 7). This conclusion is further supported by the absence of correlation between the ratios and the scores on the pre-tests only (Fig. 8).
- There appears to be a learning impact of performing the quiz prior to the laboratory session (p < 0.001 for the Anglophones, Fig. 6), the students' performance being higher for the questions included in the pre-test than for the questions presented only during the post-test.

Future Work

- Evaluate the perception of the ANP1106/1506 students on the usefulness of the laboratories towards their future career
- Correlate the Health Science and Medical students' perception of the laboratories with the academic benefits via the administration of a survey.
- Evaluate the Health Science and Medical student's perception on the impact of the interactions among future health professionals.
- Repeat the study for the nervous system.
- Evaluate the academic benefits of the sessions pertaining to the Medical students

References

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