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# Correlation of Open Lab X and Students' Final Grades

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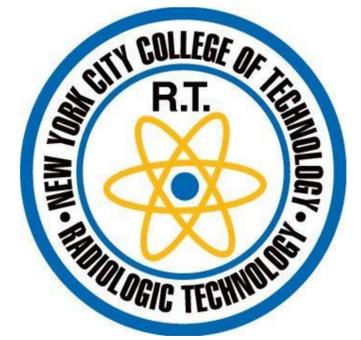
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CUNY Research Scholars Program 2019-2020



## Introduction

The Department of Radiological Technology and Medical Imaging mission is to provide education that will enable our students to become competent entry level Radiologic Technologist by utilizing open-ended laboratory. In other universities that use open lab, they have demonstrated that using this resource pushes student to self-think and to formulate their own strategies while applying their understanding of concepts.<sup>1</sup> We will discuss how first, and second year students utilize open-ended laboratory and how does it impact their grades.

In addition, we can compare data from other years and see what trends and commitments impact the use of open lab. Students are self-directed, reflective, who can think critically, all the while building on the skills that are highly desirable in the field of medical imaging. In the end, is the student a better technologist with the additional open lab hours or does open lab not reflect the reality of the healthcare field.

## Program Structure

The program is separated into two, one-year phases with each year divided into trimesters. The first year is heavily weighted on the didactic side with classroom work three times a week and clinical twice a week.

The second year consists of three days of clinical and two days of classroom work. In this phase, emphasis is placed on clinical competency and preparation for the American Registry of Radiologic Technology exam.

## Goals

To produce Radiologic Technologists who hold entry-level clinical skills for employment, can demonstrate critical thinking skills, allowing them to meet the patients needs in the clinical setting, have excellent communication skills and to monitor overall program effectiveness to ensure we are meeting the needs of the students via the utilization of open-ended laboratory.



First year clinical students are more independent in open lab in the 2<sup>nd</sup> semester and pair off in more realistic patient-technologist situations vs 1<sup>st</sup> semester students that work in groups



First year clinic students are exposed to positioning that are not always standardized and based on the patient condition, may not be feasible. These alternative positions can be practiced on mannequins to visualize the technique and replicate the image from real patients. Students benefit from the experience and expertise of the radiographers; they are working with in the hospital setting. Students learn that flexibility and open thinking about positioning helps the patient, minimize discomfort and one can still obtain an optimal radiograph.

## Abstract

Open ended laboratory or open lab as it is known to the Radiological Technology students is an invaluable tool that the Radiological Technology Department provides to help the students become better radiographers. During the 2nd and 3rd semester, open labs become a total hour commitment which means the students have more flexibility to complete their open lab requirement. However, in the fourth semester, there is no requirement for an open lab for the second year students.

Through surveys and final grade assessments, we can study how utilizing this department resource impacts both the first and second year students. In surveying the Radiological students, we will investigate whether outside factors impact how both first and second year students use this resource. As the semester progressed during Spring 2020, two of the rooms became inoperable, did this impact attendance and utilization of the open lab. Do radiological students continue use if there is no open lab requirement.

## Methodology

Our research builds upon data obtained from previous years of open laboratory and focuses on the students in the Radiological Technology Program. As part of a full year study to understand how attitudes, time and personal responsibilities, in addition to a participation requirement of open laboratory, we hope to understand how having or not having a mandatory open lab helps students perform better as radiographers.

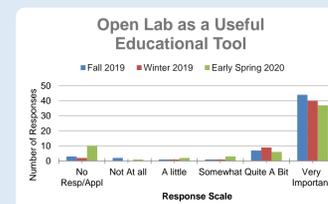
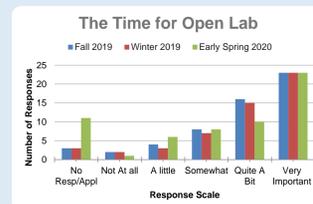
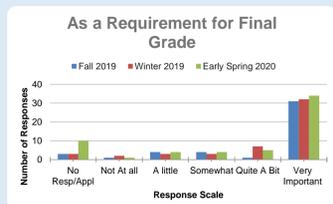
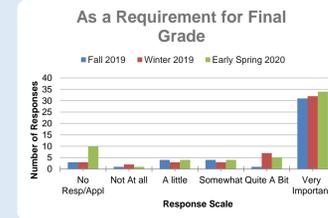
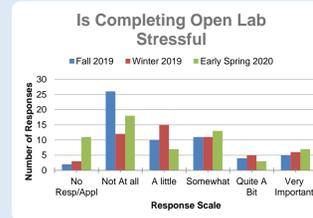
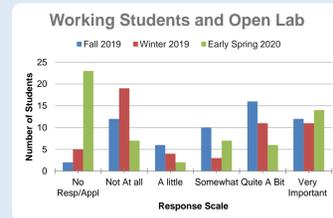
Data will include snapshots of how the students are utilizing open lab over the fall semester. The same survey will be distributed several times in the Spring, and we will see if different semester academic and clinical requirements will impact how often and the end effect of open laboratory on the first-year students as they enter and complete the first phase of the clinical portion of their education

All data was exported into Microsoft Excel and Google Sheets to create charts for detailed data analysis.

## Results

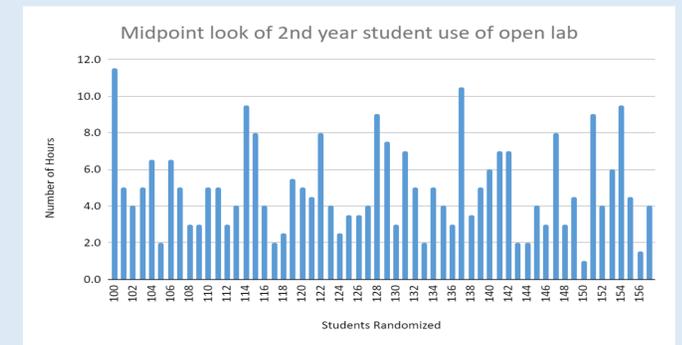
Utilizing surveys, we can gather snapshots of how the 1st year students are utilizing open lab and what external factors can impact their ability to use the lab during the hours that are available.

The response scale starts from No Response/Not Applicable to Very Important. In the 2nd semester, students are not obligated to attend open lab weekly, resulting in a lack of responses or a higher No Response count. Some charts are consistent for results whereas others that are more time dependent have more variation, such as the Working Student and Stress of completing Open Lab.



## Results continued

When analyzing 2nd year Radiological Technology students and their open lab requirement, only 9 out of 58 students have fully completed the total requirements at the mid-semester point. The remaining data will be gathered at the end of the semester, including any analytical correlation of increased open lab usage with final grades assessment



Some of the objectives we will be looking at to see the correlation of grades with open lab

- Does increase number of open lab hours equal greater competency or greater communication skills in the clinic setting
- Does the increase number of open lab hours correlate to a higher grade
- Compare/correlation of the didactic and clinical grades.
- When tracking 1st years, does the weekly requirement lead to better technical performance during 1st clinical.
- Are the factors that impact first year utilization, have the same impact during the 2nd year, and for clinical
- When comparing grades of students, and open lab hours turn out a technically competent technologist or a compassionate, emphatic technologist.

## Conclusion

Open lab requires students to think about what they are doing and why, while working collaboratively with others.<sup>2</sup> In the end, students are self-directed, reflective, who can think critically, all the while building on the skills that are highly desirable in the field of medical imaging. Successful use of open lab requires that students know how to use and operate the equipment, as well as having all the needed imaging phantoms. The open labs are meant to expand upon the professor taught labs and to reinforce patient positioning and proper technique to create the optimal radiograph for diagnosis.

## References

1. N. Abd. Rahman, N. Tan Kofli, M. S. Takriff and S. R. Sheikh Abdullah, "Comparative study between open ended laboratory and traditional laboratory," 2011 IEEE Global Engineering Education Conference (EDUCON), Amman, 2011, pp. 40-44.
2. RITZLINE, PD, et al.OPEN LAB: AN INNOVATIVE TEACHING ADJUNCT. Physical Therapy, May 1999, p. S51. Gale  
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