2021

COVID-19 Impact On Radiologic Imaging Students Learning

Rohini Mattan
CUNY New York City College of Technology

Navdeep Kaur
CUNY New York City College of Technology

Safraz Harun
CUNY New York City College of Technology

Ralph Ocampo
CUNY New York City College of Technology

Zoya Vinokur
CUNY New York City College of Technology

COVID-19 IMPACT ON RADIOLOGIC IMAGING STUDENTS LEARNING

By Rohini Mattan, Navdeep Kaur, Safraz Harun, Ralph Lauren Ocampo

Department of Radiologic and Medical Imaging. Faculty Mentor- Professor Zoya Vinokur

Abstract

The spread of COVID-19 has impacted how students learn. Traditionally, information is delivered face-to-face. In-person learning provides students the ability to engage, participate, and encourages one-on-one student-teacher interaction. Distanced learning has caused students to transition online due to the unprecedented spread of COVID-19. Classes are conducted via zoom, where students can join a class through a zoom meeting ID and password. The objective of this study is to analyze data gathered by the Radiologic Imaging department at New York City College of Technology on how students feel about this academic transition. This research aims to analyze the impact of COVID-19 on the academic and educational experience of Radiologic Imaging Students .We will analyze the Radiographic Imaging department's student's ability to understand concepts via zoom as compared to an in-person class. The ability to understand radiographic concepts and apply them in the lab and clinic is crucial for the development of that student. Lab practice is a necessity to conceptualize topics and apply the material that was given to us to upskill our knowledge. Reducing the spread of COVID-19 is a substantial concern for everyone, but we aim to survey the impact of distanced learning and the change in the structure of these students' academics and educational experiences.

Introduction

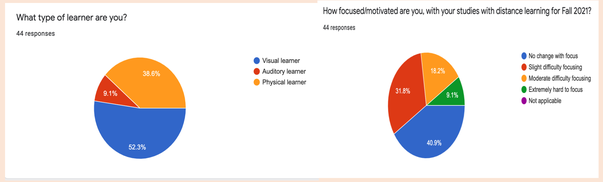
Covid-19 has affected students' learning in many ways. We conducted two surveys to figure out how the transition to online learning has affected our fellow classmates- in the Radiologic Technology Imaging major. This research aims to analyze the impact of COVID-19 on the academic and educational experience of Radiologic Imaging Students. We will analyze the positive and negative effects of the transition to distanced learning. This change has had effects on every student's ability to learn either positively or negatively. Some students find distance learning to be rather difficult. Many factors that contribute to the difficulty are things such as the age of the student, how tech-oriented that student is, and the ability to understand concepts via zoom. We used Google Survey to create a survey for the Junior class, and a survey for the Senior class. We asked objective questions with objective answers, to make sure our data was all unbiased and efficient. We were able to use those answers submitted by our fellow classmates and turn them into concise data, using percentages and graphs. (As seen down below) A total of 49 seniors out of 52, and a total of 44 juniors out of 63 have filled out the questionnaires. We asked different types of questions such as how online learning has affected focusing skills, were there any internet issues, how easy it was to adapt to online learning, etc. As you go below you will see all of the following data that was collected.

Methodology

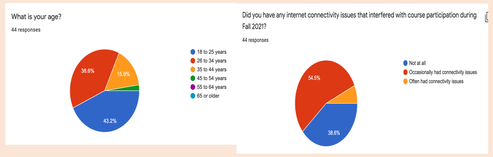
In order to conduct our research, we followed a longitudinal research design continuing the Radiologic Imaging Department's previous research. We analyzed the incoming junior class of radiologic imaging student's ability to conceptualize and understand topics for their didactic education and clinical application via distance learning. Having learnt most of the core radiographic concepts as well as preparing to utilize these concepts in real clinical application, we felt it was the right time to distribute surveys in order to evaluate how distanced learning has impacted the way in which these students tackle clinical. Receiving the content through online lectures is vastly different from an in-person lecture. In order to observe the change in pattern from the start of the first online lecture to some of the last lecture topics before clinical, 44 out of 63 junior students were sampled resulting in 70% of the total junior student body in the Radiologic Imaging Program. While a total of 49 out 52 seniors were also sampled resulting in 95% of the total senior student body in the Radiologic Imaging Program. To get the most accurate results we would compare the results of both juniors and seniors together to see if both classes would yield the same results and have similar data to the following questions that was answered in the surveys. For the senior survey, we decided to distribute a similar survey based upon the fact that we received the junior's survey from the previous year's research. The survey from last year's research were based off our experiences throughout Fall 2020 year. The way the surveys were distributed to both seniors and juniors were using Blackboard Collaborate and zoom. We had multiple Radiologic Imaging professors distribute the surveys amongst the junior and senior students. In order to observe the change in pattern, we waited for the students to have their first online lecture and compared the learning experience to their last lecture contents. A total of 44 out of 63 junior students were sampled resulting in 70% of the total junior student body of the Radiologic Imaging Program. A total of 49 out of 52 senior students were sampled resulting in 95% of the total senior student body in the Radiologic Imaging program.

Results Junior

Many factors such as age, internet connectivity, type of learner that student is, and where that student can study as well ,as how they study contributed to these students' ability to comprehend radiographic concepts. Age groups range from 18-25, 26-34,35-43, 45-54 years of age. 83.6% of juniors are ages 18-34 in the 2021 class. These age groups would primarily find adapting to online learning very easy as most people in this age group are very tech-savvy. In-fact, 32.7% of junior students found it easy to adapt to distanced learning during the Fall semester of 2021. However, a total of 32.7% students in the junior sample found it a little hard, and 22.4% found it difficult to adapt to distanced learning.



Taking into consideration that these students are taking classes such as Radiographic Protection, Radiographic Image Production and Evaluation, Radiographic Procedures, and Patient Care and Management online. These classes are conducted via zoom or blackboard collaborative as well as attempting to teach new radiographic concepts to juniors over these platforms. Almost 54.5% of students amongst the junior sample experienced some sort of connectivity issue while in the lecture. Internet connectivity is crucial for quizzes, midterms, and finals. The most common problem amongst students taking classes distanced learning was internet connectivity issues. Many students got logged out of exams and were unable to resume.



These students got penalized for being unable to complete the exam despite it being out of their control. Where students learn plays an important part in how these students are able to retain and articulate the content that is provided to them. 77.3% of juniors learn the most in person lab.

In Fall of 2020, the ability to go to lab was reduced due to the spread of COVID-19. Students' lab time had been reduced from once a week to once every two weeks due to COVID-19. This made learning concepts such as radiographic positioning very difficult. We found that 84.1% of junior students in Fall of 2021 were studying on their own. Approximately 9.1% of the junior sample formulated some sort of in-person study group. Many students miss a lot learning from home such as interaction with other students, interactions with educators, extracurricular activities such as student government and undergraduate research, and access to school resources. In a sample, 21 (48.8%) students attested to missing all of the above because of distanced learning. Distanced learning has forced students to learn via their devices course content that would be better conceptualized in an in-person lecture, in fact 38.6% of junior students are hands-on learners and 52.3% of the junior crop are visual learners.

References

Silva, Victor et al. "'Interventional Pain Training Using Phantom Model During COVID-19 Pandemic.'" Pain practice (2021): n. pag. Web.

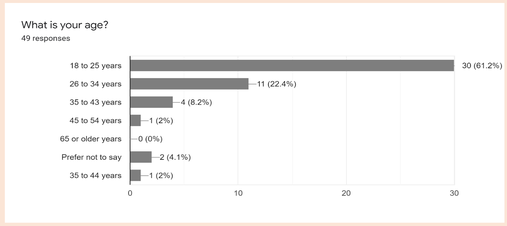
Thom, Mitchell L, et al. "Is Remote near-Peer Anatomy Teaching an Effective Teaching Strategy? Lessons Learned from the Transition to Online Learning during the Covid-19 Pandemic." Anatomical Sciences Education, vol. 14, no. 5, 2021, pp. 552–561., https://doi.org/10.1002/ase.2122.

Torres, Anna et al. "Transition to Online Is Possible: Solution for Simulation-based Teaching During the COVID-19 Pandemic." Medical education 54.9 (2020): 858–859. Web.

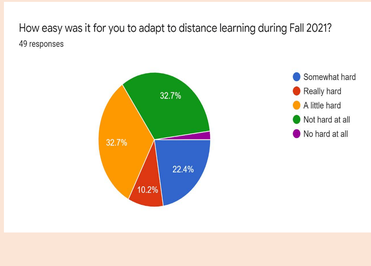
Giving an Effective Poster Presentation. Retrieved from https://www.youtube.com/watch?v=vMSaFUrk-FA

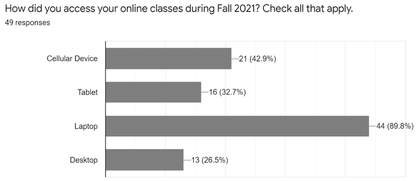
Result Senior

Based on the results of the survey, The data suggested that 61.2% of the whole student body are in the age range 18 to 25 years old and 38.8% of the students were 26 and older. Age is definitely an important factor because with online learning, there was a huge new reliance on technology.

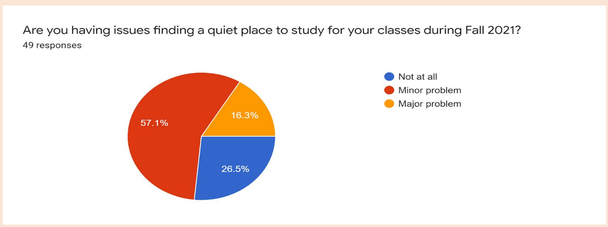


Which can be an issue for some people because they might struggle with learning new technology. In addition, 37.2% of the whole senior student body have no issue adapting to Online classes such as zoom and blackboard collaborate while the 65.3 % of the total student body stated that online classes made it more for them to difficult to adapt to different types of factors, such as Access to Online (phone, tablet, etc), Internet Connection, and place to study.





These factors greatly affected 51% of the student body to take their classes online due to Internet connectivity issues. Where natural factors such as bad weather is enough to make one student's internet connection to be out of service and miss the class or test entirely due to the connection being interrupted. Also, in terms of finding a suitable place to study 57% of the overall student body stated that finding a quiet place is a minor problem. Due to the facts some of the Senior Students are taking classes in their house where they can't control the noise level around them.



Conclusion

COVID-19 has changed many lives around the world. Education is a major subject that affects many adults and children, and COVID-19 has impacted the way they are receiving it . Our research was to analyze how COVID-19 has affected the education system for students. We collected data from our junior and senior peers who are currently in the Radiologic Technology program at New York City College of Technology in order to see what their thoughts and opinions were. Besides COVID-19 affecting the way people learn, we also have to take into consideration that every age, and ethnicity learns in their own way of learning. Everyone also has their own pace at which they can grasp information. One thing we found based on our results is that many people are visual and physical learners, which can mean two things. One thing it may mean is that some students would need to be physically in person to really understand what they are learning. While for others, online learning was beneficial to them. Some people also had difficulty focusing with online learning because some people have many distractions at home, while some people had no issues with the transition from in person learning to online learning. Another issue with learning online and in person during covid is many people prefer in person learning but they are adjusting to the online method because they are scared to come back in person and be around a lot of people since you don't know who can have the virus or not. 53% of the senior students are scared for many reasons if another wave happens, such as delaying our clinicals and classes which means it will also cause graduation to be delayed as well. To conclude our aim was achieved, using the data we have collected we can definitely tell how online learning brought upon some drawbacks and some positive outcomes. Lastly, we will be monitoring these results and we will compare them with the Spring 2022 semester to see if any changes occur.