

Introduction

- Molecular diagnostics has become an integral discipline of laboratory medicine.
- Since 2001, the guidelines for the National Accreditation Agency for Clinical Laboratory Science (NAACLS) have required that educational programs incorporate molecular diagnostics into their curriculum.
- To fulfil the requirements of the NAACLS, the Department of Clinical Laboratory Science at the University of Texas Medical Branch (UTMB) incorporated molecular diagnostic lecture content with four days weekend molecular laboratories into their molecular biology course for distance students.

Aims

- The goal of this study was to assess whether student outcomes of weekend molecular lab sessions were comparable to on-campus students lab sessions.
- This study achieved its goal by testing two specific aims:
 - Aim 1 compared on-campus students' outcome (final grade in the course) versus distance students' outcomes for any statistically significant difference for the three previous semesters (2017-2020).
 - Aim 2 assessed for any statistically difference in student outcomes between the two groups (on-campus vs. distance students) for each semester. (i.e. 2017, 2018, 2019 & 2020)

Methods

- A retrospective study using Blackboard grade center was used to gather data from the molecular diagnostic for both group of students from three different semesters (2017-2020).
- Students' final grade in the course was the primary data collected in this study.
- A t-test was used to perform data analysis on the collected data for statistical significance.
- A p value < 0.05 was considered statistically significant.

Three year outcome comparison of distance students vs. on-campus students

	On-campus students (n=94)	Distance students (n=82)	p-Value
Previous three semesters (2017, 2018 & 2019)			
Average weighted total grade	84.06663945	83.481883	0.802

Semester outcome comparison of distance Students vs. on-campus students

Semester Year	Average weighted total grade	p-Value
2017		
On-campus students (n = 37)	83.79144865	0.663
Distance students (n = 9)	82.40397889	
2018		
On-campus students (n = 39)	81.27316692	0.684
Distance students (n = 34)	81.83152176	
2019		
On-campus students (n = 18)	87.13530278	0.610
Distance students (n = 30)	86.21014833	

Results

- In our study, we had a total of 94 on-campus students and 82 distance students in the three semesters from 2017 to 2019 in the molecular diagnostics course. The average weighted total grade for the on-campus students was approximately 84.1 and similarly, the distance students' average grade was 83.5.
 - Aim 1: When the previous three semester (2017-2020) outcomes of two groups (on-campus vs distance) were compared; there was no statistically significant difference (p = 0.802) between the two groups final grades.
- Furthermore, our study showed that individual semesters from 2017 to 2019 showed variation in number of students between the two groups (on-campus and distance) while the average weighted total grade remained relatively the same (~81 – 83).
 - Aim 2: There was no statistically significant difference (p > 0.05) between the two groups final grades for each semester (i.e. 2017, 2018 & 2019).

Limitations

- Timeframe for the study was limited to three years (2017 – 2019).
- Only one course (Molecular diagnostics) was used to collect the study data.

Conclusions

- Our study showed that in the previous three years (2017 - 2019), both the on-campus students' and distance students' outcome in the molecular diagnostics course was relatively the same.
- Also, our study showed that the past three semesters (2017 – 2019), the average weighted total grade between the two groups (on-campus and distance) was consistently the same, averaging between 81 – 87 (Letter grade B).
- Weekend molecular lab sessions were equal to on-campus lab sessions which provide students with molecular biology knowledge and skill.