

## A Comparison of On-Campus and Distance Educational Environments and Outcomes

Barbara L. Russell, Ed.D., MT, SH  
Program Director and Associate Professor

John Meyer, Ed.S.  
Assistant Professor

## Objectives

- How distance learning is used at the Medical College of Georgia to offer entire healthcare curriculums via distance.
- Methods used by faculty to ensure the level of education received by both groups of students is equivalent.
- Outcomes of the distance learning programs.

## Distance Learning

### Definition:

- Carrière & Harvey defined distance learning as an educational environment where the teacher and student are separated by space and/or time

Carrière & Harvey, (2001). *The Journal of Continuing Education*, 21(3), 150-157

## National Center for Education Statistics

- In the 2000-2001 academic year
  - 56% of all 2 and 4 year degree granting institutions offered distance education courses
  - Public institutions were more likely to offer distance education than private institutions
  - Public institutions
    - 90% of 2 year schools
    - 89% of 4 year schools
  - 3,077,000 students enrolled in distance courses

Waits & Lewis, (2003). U.S. Dept. of Ed., <http://nces.ed.gov/surveys/peqis/publications/2003017>

## Distance Learning at the Medical College of Georgia

- Programs currently offering distance learning programs
  - Clinical Laboratory Science
    - BS and MHS programs
  - Health Informatics
    - BS and MPH
  - Nuclear Medicine Technology
    - BS

## Clinical Laboratory Science

- Blended Program
  - Students enrolled in the distance learning programs do not ever have to come to campus
  - All didactic courses are offered on-line
  - Laboratory courses are
    - Offered at satellite campuses
      - GGC
    - Clinical affiliates
  - Clinical internships are offered at clinical affiliates

## Nuclear Medicine Technology

- Blended Program
  - Students enrolled in the distance learning programs come to campus for one block of time a semester for intensive laboratories
  - All didactic courses are offered on-line
  - Laboratory courses are offered at satellite campuses
    - GGC
  - Clinical internships are offered at clinical affiliates

## Health Informatics

- Most Health Informatics and MPH courses are either completely online or blended classroom and online.
- Students must also participate in hands-on Clinical Internships either locally or at a location close to their home.

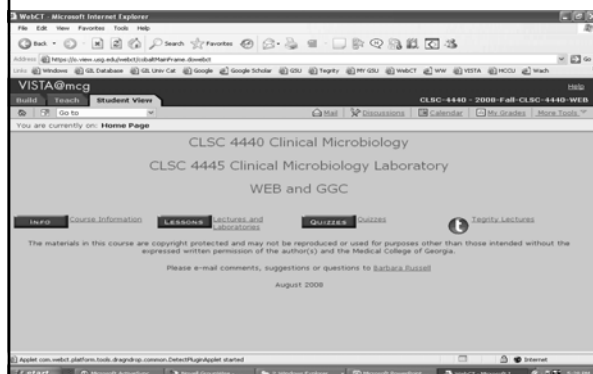
## How Faculty Ensure the Level of Education is Equivalent

- All course materials are identical
  - Didactic
  - Laboratory
  - Clinical Internships
- All examination materials are identical
- All laboratory and clinical internship experiences are equivalent

## WebCT Vista CMS

- Posting of syllabus, schedules and content material
- Links to asynchronous classroom lectures
- Web links to additional material
- Chats
- Discussion board
- Online Quizzes and Examinations

## Course Management Software



## What is Tegrity?

- Campus-wide classroom capture and Internet streaming solution for online and distance education
  - Lecture recording and server upload
  - Course Management System (WebCT Vista) Powerplug for student access
  - Chapter replay saves time for students
  - Lectures downloadable to Ipad or MP3 player
  - Allows student viewing and reviewing online anytime, anywhere

## Tegrity Lectures

Class	Recorded	Duration
Anaerobes of Clinical Importance Part II	9/30/2008	72:56
Anaerobes of Clinical Importance Part I	9/29/2008	98:44
Mycobacterium tuberculosis and Other Nontuberculous Mycobacteria Part 2	9/21/2008	58:16
Mycobacterium tuberculosis and Other Nontuberculous Mycobacteria	9/21/2008	49:51
Aerobic Gram-Positive Bacilli	9/22/2008	61:40
Corynebacterium and Other Non-Spore-Forming Gram-Positive Rods	9/18/2008	45:32
Nonfermenting and Miscellaneous Gram-Negative Rods	9/16/2008	59:59
Vibrio, Aeromonas, Plesiomonas, and Campylobacter Species	9/15/2008	74:03
Enterobacteriaceae Part 2	9/11/2008	56:23
Enterobacteriaceae	9/10/2008	52:21

## Tegrity Lectures

**Proteus vulgaris<sup>4</sup>**

KIA Urea PAD Indole LIA

## Index of PP Slides from Lecture

### Some Benefits of using Tegrity

- Students can review for refresher or for better comprehension
  - Foreign language students gain better comprehension through review
- Students can view or listen to one topic without watching the entire presentation
- Online students can view and review the same material

### Typical Tegrity record process

- Clip on microphone
- Click the Tegrity Start button
- Identify course and recording title
- Records visuals from computer
- Click Stop button when class ends
- Processes and uploads now or later
- 24/7 access to recordings

start  
 stop

### Population and Sample

- Population
  - Allied health programs at an academic medical center that are offering both distance learning and traditional on-campus education for degree obtainment
- Sample
  - Existing data were collected from two allied healthcare programs
    - Two programs
      - Clinical laboratory science
        - » 42 distance students
        - » 113 on-campus students
      - Health information administration
        - » 14 distance students
        - » 17 on-campus students

## Data collection

- Obtained a list of graduates from each disciplines program director
- From the registrar data were collected on:
  - Gender
  - Age
  - Race
  - Overall admission GPA
  - Math/science admission GPA
  - Final GPA
- Obtained certification scores for each student from their respective program director
  - CLS – American Society for Clinical Pathologists Board of Registry
  - HI – Registered Health Informatics Administrator Examination

## Results of Chi-square for Program and Gender

- Clinical Laboratory Science
  - On-Campus
    - 80% female
    - 20% male
  - Distance
    - 74% female
    - 26% male

Chi Square – 0.61
- Health Informatics
  - On-campus
    - 76% female
    - 24% male
  - Distance
    - 100% Female

Chi Square = 3.78

## t-test Values for CLS Outcomes

Outcome	On-Campus Mean	Distance Mean	t-value
Age	25.91	33.88	-5.53**
Overall GPA	3.03	3.14	-1.58
M/S GPA	2.93	2.93	0.01
Final GPA	3.49	3.53	-0.58
Cert Score Total	495.34	523.17	-1.54

\*p<0.05, \*\*p<0.01

## t-test Values for HI Outcomes

Outcome	On-Campus Mean	Distance Mean	t-value
Age	27.06	31.21	-1.32
Overall GPA	3.10	2.97	0.69
M/S GPA	2.86	2.72	0.65
Final GPA	3.47	3.56	-0.61
Cert Score Total	119.73	113.50	0.98

\*p<0.05, \*\*p<0.01

## Conclusions

- No difference in previous academic performance between the two groups
  - Previous academic performance was measured by
    - Overall admission GPA and
    - Math/science GPA

## Conclusions

- The two groups were similar in gender and previous academic performance
- These constructs should have no influence on the conclusions

## Conclusions

- No difference in academic performance between the two groups
  - Academic performance was measured by
    - Final GPA scores
    - External certification pass rates
- Therefore, it can be postulated that distance learning programs are as effective in educating allied healthcare practitioners as the traditional on-campus programs

## Conclusions

- There was no difference in academic performance between the two groups within the two specific programs for final GPA scores and certification scores.

## Final Conclusions

- Overall results
  - There are no significant differences in academic performance between the two groups
- Therefore
  - It can be postulated that distance learning can be used as a successful alternative to traditional on-campus learning in allied healthcare education
- Further research
  - Larger sample sizes
  - Over longer periods of time
  - Including more allied healthcare disciplines
  - Including the sub-categories of the certification exams

## Significance of the Study

- The findings of this research project can be used by
  - Administrators and educators of allied health care educational programs
  - By students who are considering taking a allied healthcare program by distance learning
  - Admission committees
  - Practicing managers of allied healthcare professions
  - Program Directors