The Community College of Baltimore County
Office of Planning, Research and Evaluation

HLTH 101 Learning Outcomes Assessment Data Summary

August 2003

This summary was prepared for the HLTH 101 LOA project conducted during the Fall 2002 and Spring 2003 term across the three campuses of the Community College of Baltimore County. The purpose of this summary is to provide faculty with information from the project so that curricular and/or instructional improvements can be discussed. The project was a pre/post test research design using a locally developed 100 question multiple-choice assessment covering 12 major content areas. The assessment data was combined with other student information for this analysis. For further information, please contact Gayle Fink, 410-455-4745 or gfink@ccbcmd.edu .

Background - All Courses Fall 2002 (Catonsville and Essex) and Spring 2003 (Dundalk) Terms

- A total of 56 sections of HLTH 101 ran during the Fall 2002 and Spring 2003 terms:
  - Fall 2002: 22 through Catonsville and 29 through Essex
  - Spring 2003: 5 through Dundalk
- Over 1,300 students (N=1,313) were enrolled in HLTH 101 at the end of the third week of the terms covered by the LOA
  - Fall 2002: 542 at Catonsville, 676 at Essex
  - Spring 2003: 95 at Dundalk
- At CCBC, a majority of the students were female, white and between the ages of 18 and 24. African-Americans comprised over a quarter of HLTH 101 enrollment (26.5%). However, African-Americans comprised a greater percentage of students at Catonsville (See Table 2).
- Of the 1,313 students enrolled, 1,268 (97%) received a grade of A, B, C, D F, or W. See Table 1 for the grade distributions

Table 1
HLTH 101 Grade Distributions for LOA Terms

Grades	Catonsville	Dundalk	Essex	CCBC	All Courses CCBC (Fall 2002)
A-D	78% (409/525)	78% (69/88)	74% (482/653)	76% (960/1,266)	75% (38,646/51,229)
F	15% (80/525)	18% (16/88)	17% (111/653)	16% (207/1,266)	16% (8,212/51,229)
W	7% (36/525)	4% (3/88)	9% (60/653)	8% (99/1,266)	9% (4,371/51,229)

LOA Participating Sections Fall 2002 (Catonsville and Essex) and Spring 2003 (Dundalk) Terms

- Overall, 46 percent (N=26) of all HLTH 101 sections participated in the LOA project – Catonsville (9), Dundalk (1), and Essex (16). Several others participated to some extent by providing either pre- or post-tests only.
- A total of 621 students were enrolled in these sections. Of these students, 394 (63%) matched pair pre and post tests were collected. Dundalk LOA pre-and post-tests were excluded from the analysis due to the small sample.
- Table 2 shows the demographic distributions of the population and the sample. The sample is fairly representative of the population both at the campus and institutional level with regard to gender and age. However, African-Americans are under-represented in the LOA matched pairs sample. This may be due to fact that African-Americans withdraw from HLTH 101 at a higher rate (11% vs. 6% for all other students) and were therefore not in class at the time the post-test was administered.

Table 2
Demographic Characteristics HLTH 101 and LOA Matched Pairs

	All HLTH 101 Sections						LOA Matched Pairs					
	CAT		ESSEX		CCBC		CAT		ESSEX		CCBC	
	N	%	N	%	N	%	N	%	N	%	N	%
Total Students	525		653		1,178		135		246		381	
Gender												
Female	341	65	352	54	693	59	89	66	141	57	230	60
Male	181	34	288	44	469	40	46	34	101	41	147	39
Unknown	3	1	13	2	16	1			4	2	4	1
Ethnicity												
African-American	207	40	118	18	325	28	39	29	31	13	70	18
Other Minority	35	7	34	5	69	6	7	5	13	5	20	5
White	244	46	472	72	716	61	78	58	191	78	269	71
Unknown	39	7	29	4	68	5	11	8	11	4	22	6
Age												
<18	13	2	8	1	21	2	4	3	6	2	10	3
18-19	163	31	309	47	472	40	47	35	112	46	159	42
20-24	211	40	239	37	450	38	46	34	91	37	137	36
25-29	57	11	45	7	102	9	14	10	13	5	27	7
30-39	51	10	31	5	82	7	14	10	15	6	29	8
40 and older	30	6	21	3	51	4	10	8	9	4	19	4

May not add to 100% due to rounding.

Statistical Terms

- Mean – the total of all observed values divided by the number of observations
- Statistical Significance – In statistics "significant" means probably true (not due to chance). Significance levels show you how likely a result is due to chance. The level used in this analysis is .05 (a 5 percent chance of not being true). A likelihood of being true can be calculated as follows 1 – the significance level. For example if the significance level is .79 there is a 21 percent chance that the relationship is probably true. There is an assumption that the LOA participants reflect the population. Also, a research finding maybe true without being important. This is where faculty are important in assisting research in determining if a finding of significance is important.

LOA Results – Total Score Distributions

- On average, the scores from the post-test significantly increased from 60 to 65 {$t(378) = 8.34$, $p > .05$}. Both Catonsville and Essex students scored an average of 60 on the pre-test. However, Catonsville students increased 7.3 points to 67.6 while Essex students increased only 3.3 points. Interestingly, only 25 percent of the sample scored 54 or below on the pre-test indicating students have a knowledge set coming into the course. See Figures 1 –3 for the total score distributions for CCBC and by campus.

Figure 1
Fall 2002 HLTH 101 LOA Total Score Distribution - CCBC

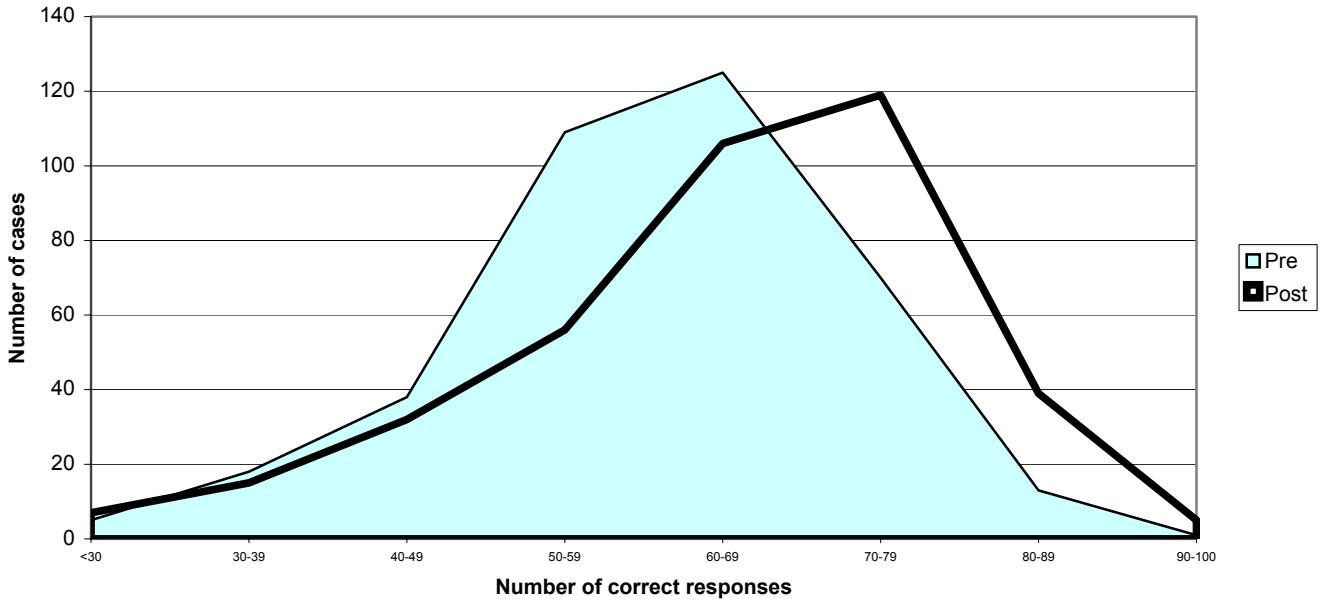


Figure 2
Fall 2002 HLTH101 LOA Total Score Distribution - Catonsville

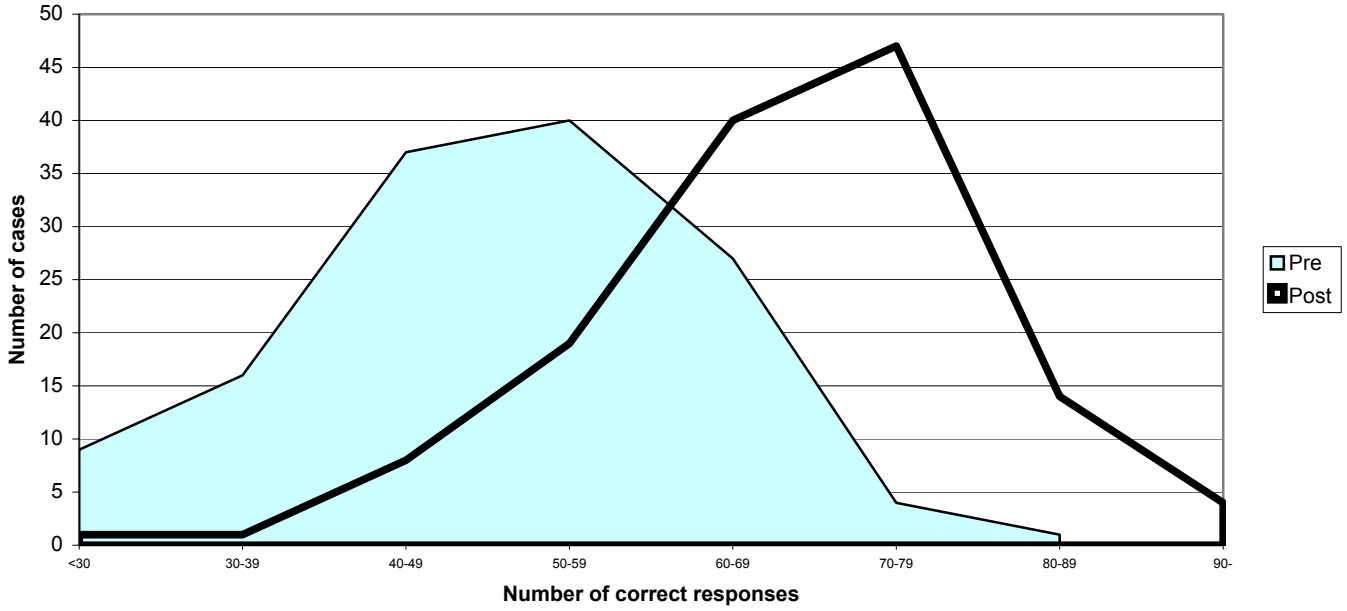
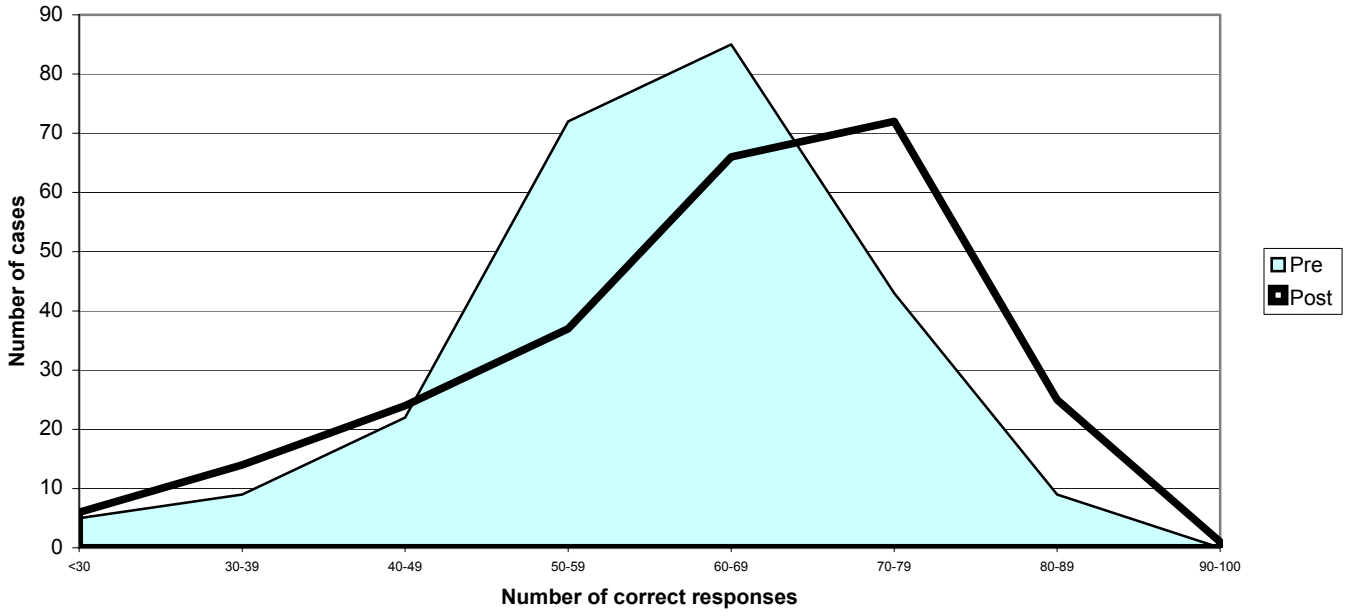


Figure 3
Fall 2002 HLTH 101 LOA Total Score Distribution - Essex



- In each case, the total score distribution shifted to the right in a positive direction confirming that in at least 70 percent of the cases the post-test score was greater than the pre-test total score (Wilcoxon Signed Ranks Test). The positive direction was greatest at Catonsville where 84 percent of the cases had greater post-test scores. Essex was 71 percent.

LOA Results – Post-test Total Score Distributions by Demographic Characteristics

Analysis of post-test total scores was also compiled by location of course and demographic characteristics (See Table 3).

- Statistically significant differences in post-test scores were found at the following demographic levels:
  - Between campus – Catonsville (68) and Essex (63) mean post-test score differences were significant (.005)
  - Between ethnic groups – The differences in the mean post-test scores of African-Americans (63) and Whites (66) were significant (.001)
  - Between gender – The differences in the mean post-test scores of females (67) and males (62) were significant (.004)

Table 3
Post-Test LOA Matched Pair Mean Scores by Demographic Characteristics

	Catonsville	Essex	CCBC
	68 (N=133)	63 (N=245)	65 (N=378)
Mean	68.2	63.4	65.1
Ethnicity			
African-American	64.8	60.2	62.7
White	71.1	64.3	66.3
Gender			
Female	69.9	65.4	67.1
African-American	65.9	64.5	65.3
White	72.4	66.0	68.0
Male	64.8	60.7	62.0
African-American	61.6	52.8	57.7
White	69.1	62.1	64.0
Note: Excludes CAT student with 0 post-test total score			

LOA Results – Content Area Analysis

- The assessment instrument was broken down into twelve content areas to give an indication of areas where students were gaining knowledge. The HLTH LOA project leader made the association between question and content area. Questions may be associated with more than one category. Pre- and post-test mean scores are provided in Table 4.
- At both Catonsville and Essex, statistically significant growth in the number of correct post-test answers were noted in stress, heart disease, drugs, sexuality and general health. In addition, Catonsville's had the following content area statistical significance: mental health and nutrition. The decline in pre- and post-test physical fitness scores was statistically significant at Essex.

Table 4
Mean Pre- and Post-Test Scores by Content Area and Campus

		Catonsville (N=134)		Essex (N=245)		CCBC (N=379)	
Content Area **(Significant Differences)**	N of Questions	Pre-Test Mean	Post-Test Mean	Pre-Test Mean	Post-Test Mean	Pre-Test Mean	Post-Test Mean
Mental health **(C)**	8	5.4	5.8	5.5	5.5	5.4	5.6
Stress **(C,E)**	7	3.9	4.7	3.7	4.4	3.8	4.5
Physical fitness **(E)**	6	4.6	4.6	4.5	4.1	4.5	4.3
Nutrition **(C)**	11	6.4	7.2	6.5	6.8	6.4	7.0
Weight management	5	3.3	3.5	3.2	3.2	3.3	3.3
Tobacco	6	3.9	4.1	4.2	4.2	4.1	4.1
Heart disease **(C,E)**	12	5.1	6.0	4.9	5.5	5.0	5.7
Cancer	6	3.6	4.0	3.7	3.6	3.7	3.8
Alcohol	6	4.0	4.4	4.1	4.3	4.1	4.4
Drugs **(C,E)**	10	6.2	6.8	6.2	6.7	6.2	6.7
Sexuality **(C,E)**	19	11.2	13.1	11.1	11.8	11.1	12.3
General health **(C,E)**	7	4.2	5.1	4.1	4.9	4.1	5.0

Opportunities for Improvement

The learning outcomes assessment process is in fact a learning process for all. Many unanticipated events occur in the design and administration of an assessment. From discussions with HLTH faculty, the Planning, Research and Evaluation Office (PRE) would like to list items for consideration when the re-evaluation occurs.

1. Embedded assessment – the student should be motivated to do well on the assessment instrument. Discussions about weight in a student's final grade should be discussed.
2. Length of assessment – the instrument needs to be appropriate in length so that all sections of the course can take the assessment no matter the length of the class period.
3. Section participation – all sections including on-line need to participate in the assessment during the same term.
4. Answer sheet – PRE provides answer sheets that will facilitate data collection and analysis. At this time, most Scantron answer sheet require data entry.
5. Scripting the assessment instrument delivery – faculty should be provided a standard script that is used when administering the assessment.