

**GENERAL EDUCATION OUTCOMES: THE COLLEGE OUTCOMES MEASURES
PROGRAM (COMP) AT OHIO UNIVERSITY 1981 - 1995**

OFFICE OF INSTITUTIONAL RESEARCH

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ACT-COMP Executive Summary

- The College Outcome Measures Program is an ACT product designed to assess general education knowledge and skills. Ohio University freshmen and seniors have been tested since 1981. About 3,700 freshmen and 1,400 seniors have been tested with the COMP Objective Test. Eleven classes have been tested longitudinally to assess freshman to senior learning gain. A summary of each classes' performance and detailed eleven-year aggregate data are presented. Detailed college-specific results are given to each academic college.

- Seniors who took the COMP before the three-tier general education requirements scored lower (below the 50th percentile nationally) than students who took the COMP during and after the three-tier general education requirements were fully implemented (the 11-year aggregate mean was at the 66th percentile rank nationally for selective admissions institutions).

- Ohio University seniors scored the highest in the COMP subscores using the arts (70th percentile rank) and clarifying values (68th percentile rank). Freshman to senior learning gain was the highest in using the arts, clarifying values, and functioning within social institutions (socializing).

- Ohio University seniors score the lowest in using science and technology and communicating (both at the 61st percentile rank). Freshmen to senior learning gain was the lowest in using science and technology.

- The most recent senior class, admitted under university-wide selective admissions in 1991, scored at the 71st percentile nationally (for selective admissions institutions) on the COMP total score. Their learning gain, normed nationally was at the 65th percentile.

- Differences in senior scores and in measured learning gain among the academic colleges suggest that students gain general education knowledge and skill value from the entire academic program, not just the general education component.

- Differences were found in senior scores and in measured learning gain between open admissions classes and selective admissions classes. Seniors entering Ohio University under selective admissions score above the 70th percentile nationally.

BACKGROUND OF THE STUDY

The ACT College Outcome Measures Program (COMP) test is one of several studies in Ohio University's original Institutional Impact Project. The Institutional Impact Project began in 1981 as a result of a plan developed by the Institutional Impact Committee and approved by President Ping. American College Testing (ACT) developed the COMP in response to a growing need for materials and services to help colleges and universities evaluate and improve general education. COMP is a nationally normed standardized test. It was designed for five purposes:

1. to help institutions determine whether students are achieving general education goals.
2. to help institutions shape their curriculum to be relevant to adult functioning in society.
3. to help students plan the general education programs that best meet their needs.
4. to provide accountability evidence to higher education supporters that general education is effective.
5. to provide information that graduates are competent.

COMP was designed to measure the ability of students to apply knowledge and skills to adult life situations. It was developed as a composite examination involving 15 simulation activities requiring written and oral responses. The original test took students 4.5 hours to complete. From the composite examination ACT developed a shorter, objective test as a proxy measure. The objective test is based on the same 15 simulation activities, but responses are given in a multiple choice format. The objective test takes about two hours to complete. It is the test Ohio University has used since 1981.

ACT has done validity and reliability testing on the COMP, and significant evaluation has appeared in the academic literature. Students' performance on the COMP is related to general education programs of the participating institutions and unrelated to student maturation. ACT has found no correlation between students' age and COMP scores. ACT has demonstrated a low correlation between COMP scores and college grade point average and a high correlation with

size of the general education component and students' exposure to it. In addition, a study by ACT compared COMP scores of students in a two-year non-liberal arts general education community college program and COMP scores of students in a four-year liberal arts general education program. Students in the liberal arts program scored significantly higher than students in the non-liberal arts program. The general conclusions are that COMP scores are directly related to students' performance in an institution's general education program. COMP is a useful tool for providing information about general education effectiveness and student functioning and for promoting faculty discussion about general education.

COMP is a value-added test; through its use one can make judgments about the educational value added as a result of the educational experience. With value-added testing, the impact of an institution on students is measured in terms of change in students' scores as a result of enrollment—the net effects. Value-added assessment of outcomes considers the difference between students as they enter college and when they leave. It is usually accomplished through a longitudinal pre-test/post-test or repeated measures design.

More than 700 colleges and universities have used COMP since Ohio University began participating. The table in the Appendix lists the institutions participating in 1992. The aggregate results are normed on this selective admissions reference group.

DESIGN OF THE STUDY

The COMP Objective Test has been given at Ohio University since 1981. The original plan for the use of the COMP at Ohio University was to measure students over the first three years using a cross-sectional design (i.e., estimating score gains from the freshman to the senior year by testing freshmen and seniors of the same year and comparing the score means), and continue giving the COMP each year in a longitudinal design (i.e., testing students as freshmen and re-testing them four years later as seniors). Since the original plan, 11 years of freshman-senior longitudinal studies have been completed.

New freshmen are randomly sampled in the beginning of each fall quarter. About 1,500 freshmen are invited to participate each year. Students are sent a personal letter from the president of the University that describes the program and the dates and times the test is offered.

A letter from the Institutional Research Office accompanies the president's letter. It describes the program in detail, and it offers an incentive for student participation. Freshmen are offered a coupon for a small pizza (about a \$4.50 value) for their participation. About 25 to 30 percent of the freshmen participate each year. Ohio University's COMP freshman and senior participants were found to be representative of the University population in sex, academic college, and race.

Students who are still enrolled four years later and who took the COMP test as freshmen are invited to take the test again. These seniors receive a personal letter from the president of the University and a letter from the Institutional Research Office describing the program and the incentive offered. Seniors are offered a \$15.00 gift certificate from a local restaurant for their participation. About 75 percent of the seniors participated who were tested as freshmen. To date about 3,700 freshmen and 1,400 seniors have taken the COMP Objective Test at Ohio University.

ACT scores the COMP tests, providing a total score and six subscores. Three of the subscores are content areas, and three are process (skill) areas. The content areas are "using the arts," "using science and technology," and "functioning within social institutions" (socializing). The process areas are "communicating," "clarifying values," and "solving problems." The six areas are summarized below (more detailed information is available in the Institutional Research Office):

CONTENT AREAS

Using the Arts: understanding the aspects, impact and uses of art personally and within a culture.

Using Science and Technology: understanding and analyzing the scientific or technological aspects of a culture.

Functioning within Social Institutions: understanding social aspects and functioning of a culture.

PROCESS AREAS

Communicating: sending and receiving information in a variety of modes, settings, and for a variety of purposes.

Solving Problems: analyzing a variety of problems and selecting,
 Creating, or implementing solutions.

Clarifying Values: identifying and understanding personal and other's
 values.

The test items are configured in a matrix of process by content areas. For example, the process communicating involves communicating about the arts, science and technology, and social institutions.

This report represents a summary of results of Ohio University's use of the COMP. Two analyses are presented. First, a comparison of senior scores from 1981-1982 to 1994-1995 are presented. Second, freshman to senior change analyses are presented for the 11 years of longitudinal data.

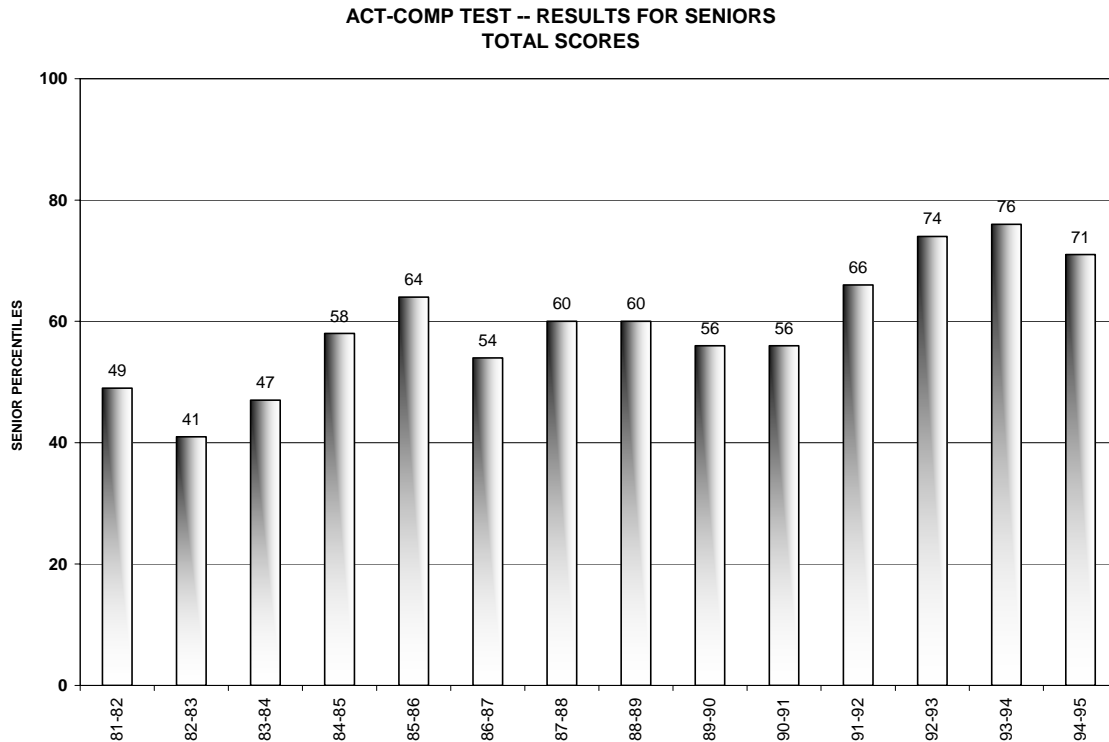
RESULTS

Seniors. Fourteen senior classes at Ohio University have taken the COMP. The first three classes were sampled randomly from each senior class; the last 11 classes were sampled as freshmen four years earlier and tested as seniors for longitudinal comparisons. Figure 1 presents results of the total scores over these 13 years. The following table presents COMP total and subscore results percentile ranks of average scores for Ohio University seniors since 1981.

<u>SENIOR PERCENTILE SCORES 1981-1993</u>							
Year	Total	Social Funct.	Using Sci.	Using Arts	Comm.	Solv. Prob.	Clar. Val.
81-82	49	54	47	56	58	49	48
82-83	41	35	47	61	45	41	52
83-84	47	43	52	56	44	49	58
84-85	58	51	61	63	57	57	61
85-86	64	55	61	76	60	69	63
86-87	54	52	56	56	46	61	56
87-88	60	52	56	60	55	68	56
88-89	60	52	67	57	63	57	58
89-90	56	63	47	63	63	56	43
90-91	56	60	51	65	64	53	47
91-92	66	64	69	70	68	65	68
92-93	74	71	69	76	72	70	80
93-94	76	65	76	76	70	73	81
94-95	71	64	75	70	67	70	80

Since 1984-1985 Ohio University's senior Total COMP scores have been above the 50th percentile. Since 1985-1986 students took all three tiers of the general education curriculum.

Figure 1

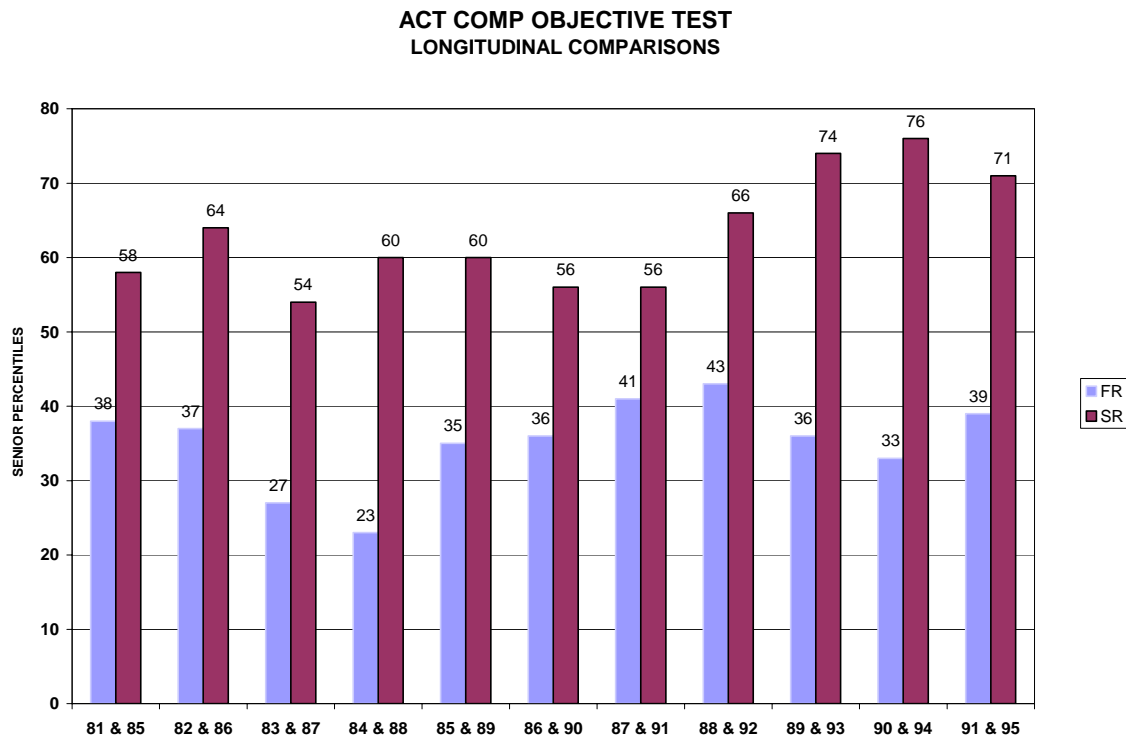


A positive trend of increase in total scores and subscores is apparent. The increase in total scores and subscores beginning in 1984-1985 coincides with three factors. First, the increase in total scores and subscores coincides with the implementation of the three-tier general education program. Since 1984-1985 the total scores and most of the subscores have been above the 50th percentile. Second, the academic aptitude of seniors in the first three years, (using ACT Assessment test scores that students took as high school seniors as a criterion) was lower than that of seniors in the last 11 years. The average ACT score of the first three years of seniors, selected randomly, was 20.5. The average ACT score of the last 11 years of seniors, selected

because they had taken the COMP four years earlier as freshmen, was 22.8. Third, the increases in scores and score gains for 1988-1989, 1989-1990, 1990-1991 and 1990-1991 freshmen (who were seniors in 1991-1992, 1992-1993, 1993-1994, and 1994-1995 respectively) coincide with increases in average ACT scores and high school rank under selective admissions. The last four senior classes entered Ohio University under selective admissions. Their average ACT composite score was 23.6; the average ACT of the first seven classes, entering under open admissions, was 22.2. Also, their Ohio University GPA's were higher than previous classes.

Freshman-Senior Comparisons. The COMP has been given longitudinally to 11 classes, beginning with students who were freshmen in 1981-1982 and seniors in 1984-1985. Figure 2 presents results of the total COMP freshman and senior scores for these 11 classes. This figure shows freshman and senior scores normed in senior percentile ranks of average scores. For example, freshmen in 1981 averaged at the 38th percentile on senior norms while these students as seniors in 1985 averaged at the 58th percentile on senior norms.

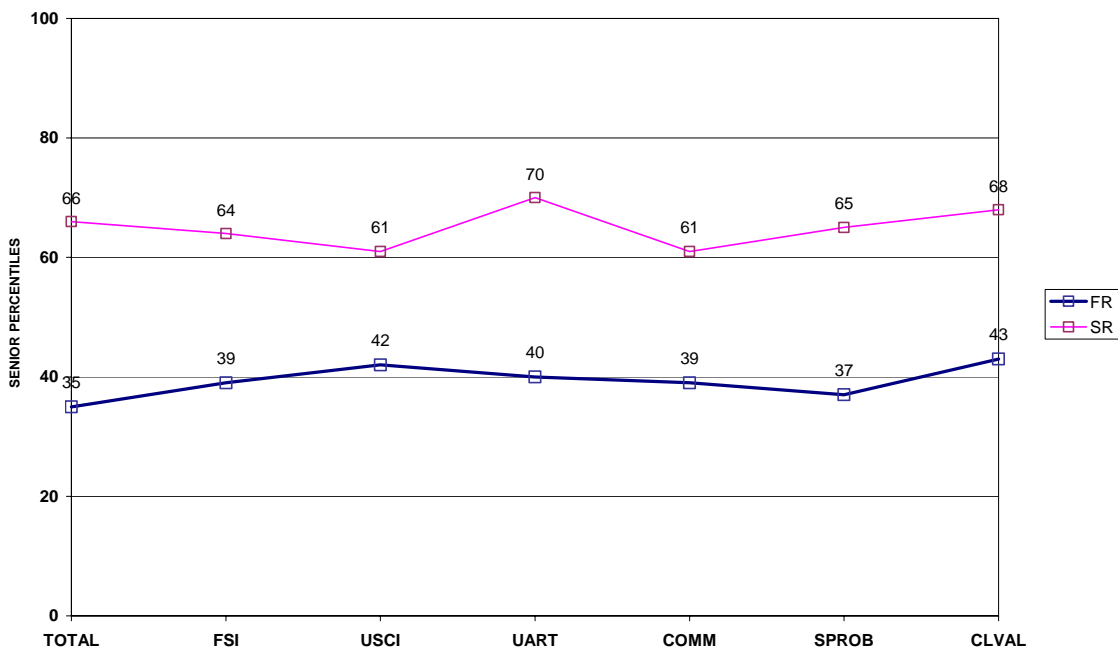
Figure 2



The learning gain (based on average raw scores converted to percentiles) has increased since the first longitudinal sample, from an average of 20 percentile points in 1981/1985 to 27 points in 1983/1987 to 37 percentile points in 1984/1988. It decreased to 25 percentile points in 1985/1989, 20 percentile points in 1986/1990 and 15 percentile points in 1987/1991. It increased to 23 percentile points in 1988/1992, 38 percentile points in 1989/1993, 43 percentile points in 1990/1994, and 32 percentile points in 1991/1995. Figure 3 presents results from the total score and subscores for all 11 classes in the aggregate. Statistically significant score gains from the freshman to the senior year were found for the total score and all of the subscores. The average percentile point gain of the 11 classes in the aggregate was 30 points for the total score, 25 points for “functioning within social institutions,” 19 points for “using science,” 30 points

Figure 3

**ACT COMP OBJECTIVE TEST
Longitudinal Comparisons (11 Year Aggregate)**



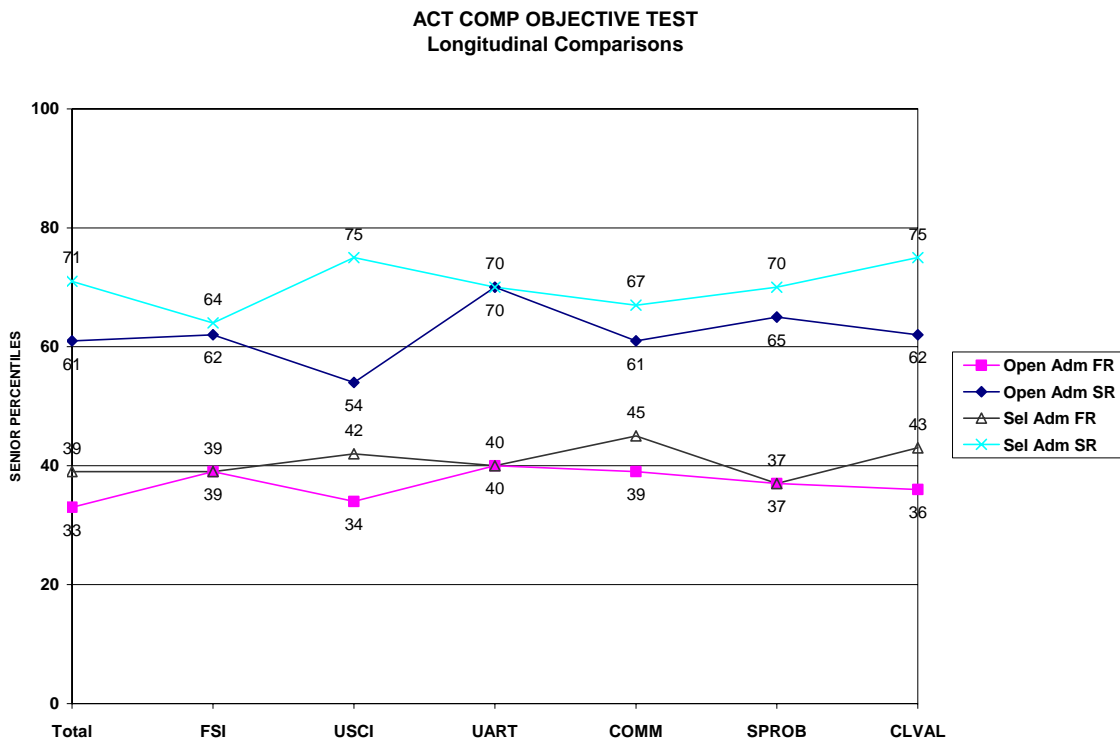
for using “using the arts,” 22 points for “communicating,” 28 points for “solving problems,” and 25 points for “clarifying values.”

Since 1992 ACT has normed nationally the COMP raw score gain for longitudinal studies of freshmen and seniors. For the 11 years of aggregate scores, Ohio University’s students gain an

average of 11 raw score points from the freshman to the senior year, which is at the 62nd percentile nationally. For the 1988/1992 class, Ohio University's students gained an average of 13 raw score points from the freshman to the senior year, which is at the 65th percentile. For the 1989/1993 class, Ohio University's students gained an average of 14 raw score points from the freshman to the senior year, which is at the 70th percentile. For the 1990/1994 class, Ohio University's students gained an average of 16 raw score points from the freshman to the senior year, which is at the 75th percentile nationally. For the 1991/1995 class, Ohio University's students gained an average of 12 raw score points from the freshman to the senior year, which is at the 65th percentile nationally.

Differences were found between the first seven years of longitudinal scores (students entering Ohio University under open admissions) and the last four years (students entering Ohio University under selective admissions). Figure 4 presents longitudinal comparisons between the first seven classes and the last four classes. On the total score, the freshman score increased six percentile points from the first seven years to the last four years. The senior score increased ten percentile points from the first seven years to the last four years.

Figure 4



On functioning within social institutions, the freshman score did not change, and the senior score increased one point. On using science and technology, the freshman score increased eight points, but the senior increased 21 points. On using the arts, the freshman score did not change, and the senior score did not change. On communicating, the freshman score increased six points, and the senior score increased six points. On solving problems, the freshman score did not change, but the senior score increased five points. On clarifying values, the freshman score increased seven points, and the senior score increased 13 points.

Differences were found among scores of students from the academic colleges at Ohio University. Figures 5 through 13 present results of the COMP total score and subscores for the 11 longitudinal studies in the aggregate for each academic college. (Colleges receive their own detailed annual results.) Among the seniors, students from Honors Tutorial and Engineering and Technology scored the highest on the total score. Larger gains were found among colleges with lower freshman scores—Education, Health and Human Services, Fine Arts and Business.

Students from the different colleges demonstrated the following average percentile point gains on the total score in the following order: Education (41), Business Administration (33), Fine Arts (31), Arts and Sciences (30), Health and Human Services (29), Communication (27), Engineering and Technology (25), University College (20), and Honors Tutorial (17). While there were differences among the colleges in freshman scores and in senior scores, there was less variability among the colleges in the senior scores than among the freshman scores.

In the subscore “functioning within social institutions” the largest gains were found in Education (29), Business (26) and University College (22). In the subscore “using science and technology” the largest gains were found in Business (35), Education (32) and Health and Human Services (30). In the subscore “using the arts” the largest gains were found in Education (37), Engineering and Technology (30), and Fine Arts (30). In the subscore “communicating” the largest gains were found in University College (28) and Education (23). In the subscore “solving problems” the largest gains were found in Arts and Sciences (33), Business (32), and Education (32). In the subscore “clarifying values” the largest gains were found in Education (39) and Fine Arts (39).

Figure 5

ACT COMP OBJECTIVE TEST
ARTS & SCIENCES (11 Year Aggregate)

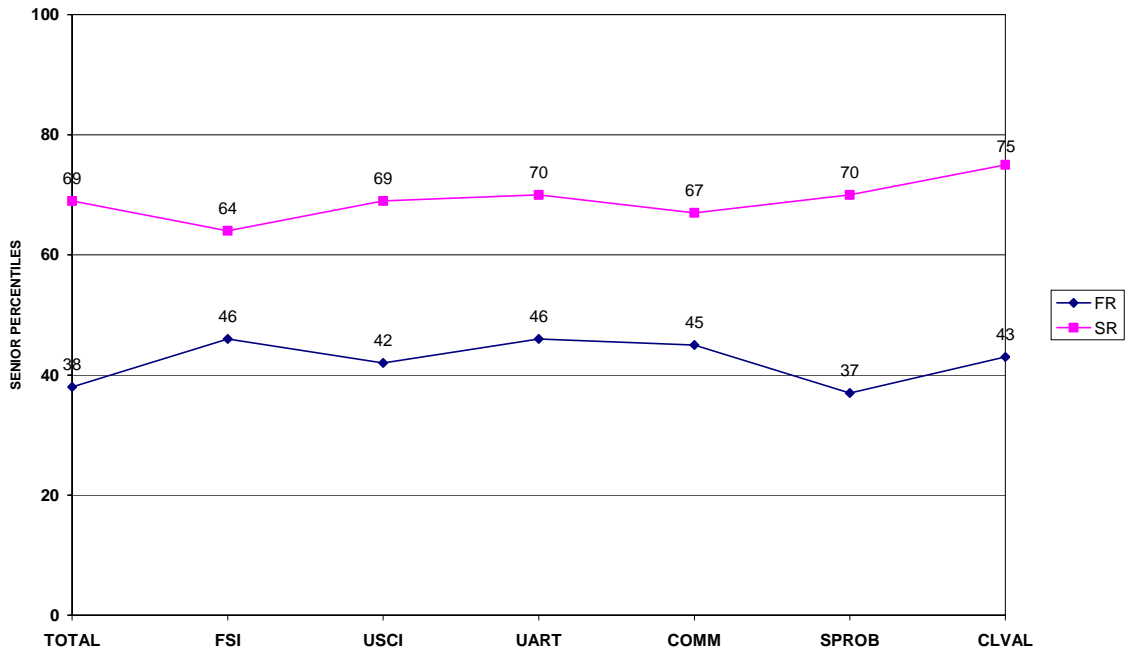


Figure 6

ACT COMP OBJECTIVE TEST
BUSINESS (11 Year Aggregate)

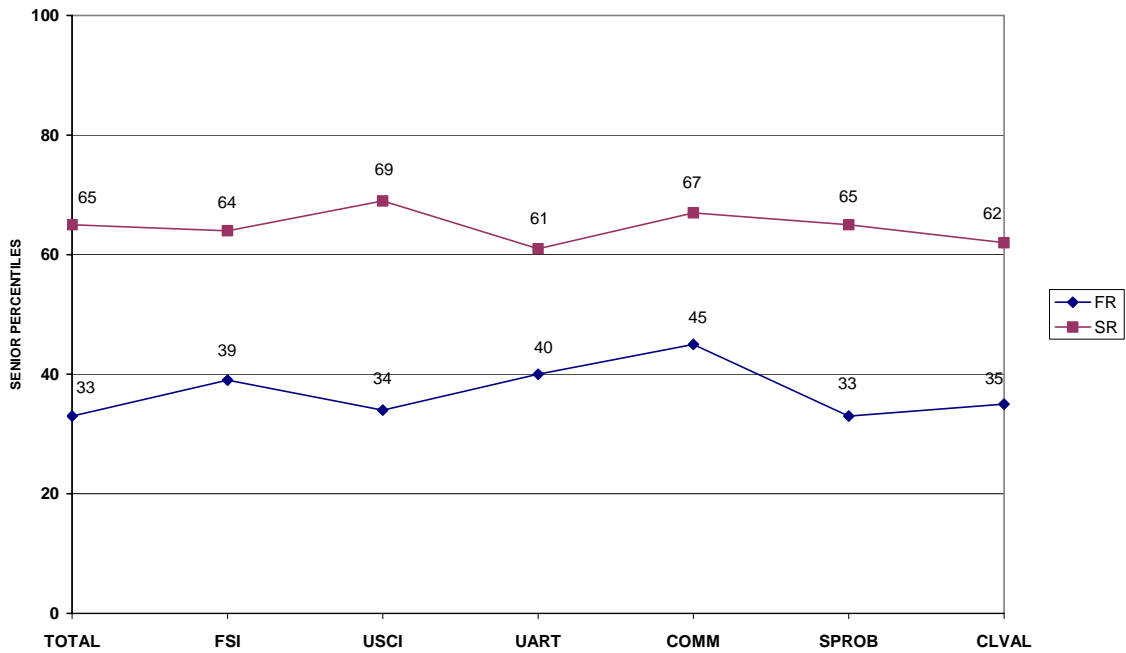


Figure 7

ACT COMP OBJECTIVE TEST
COMMUNICATION (11 Year Aggregate)

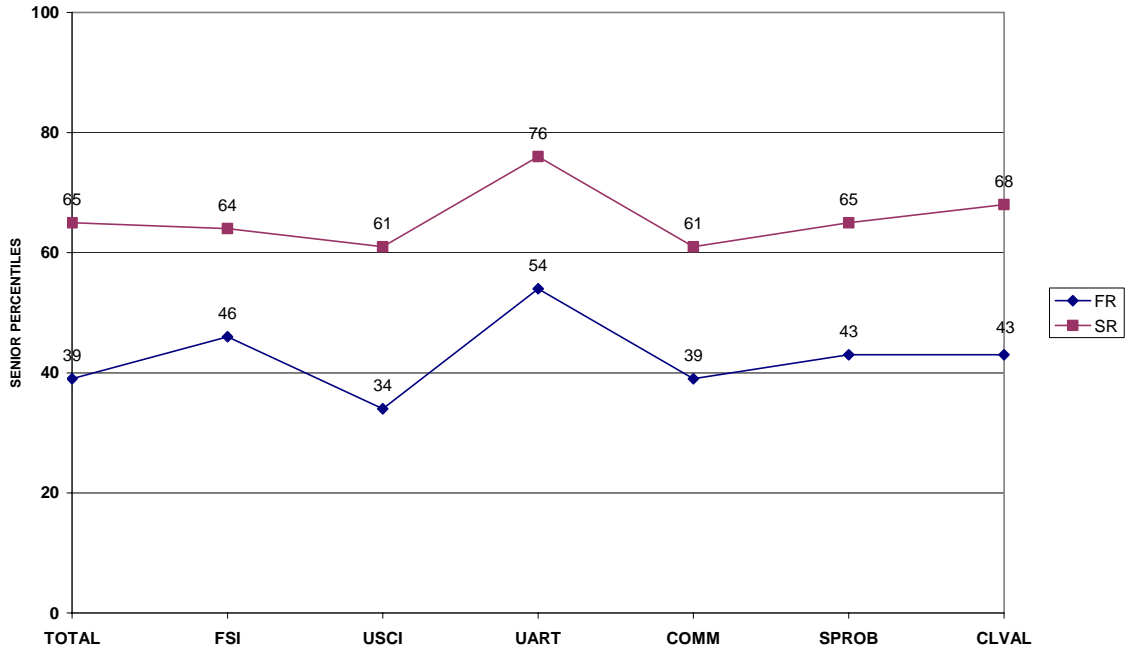


Figure 8

ACT COMP OBJECTIVE TEST
EDUCATION (11 Year Aggregate)

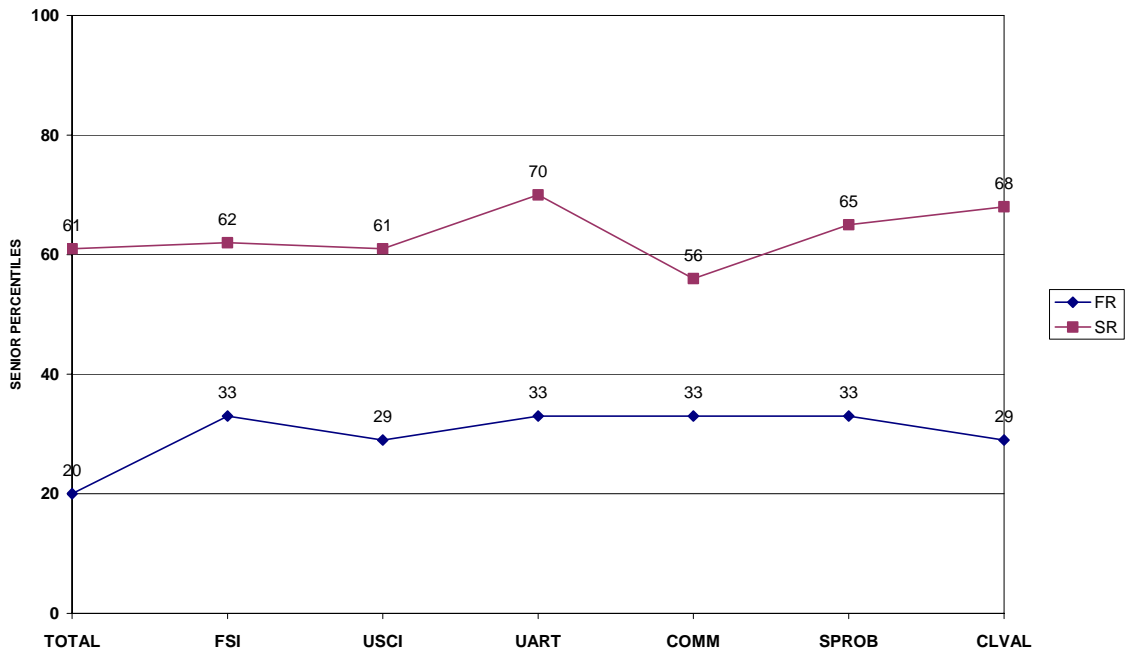


Figure 9

ACT COMP OBJECTIVE TEST
ENGINEERING & TECHNOLOGY (11 Year Aggregate)

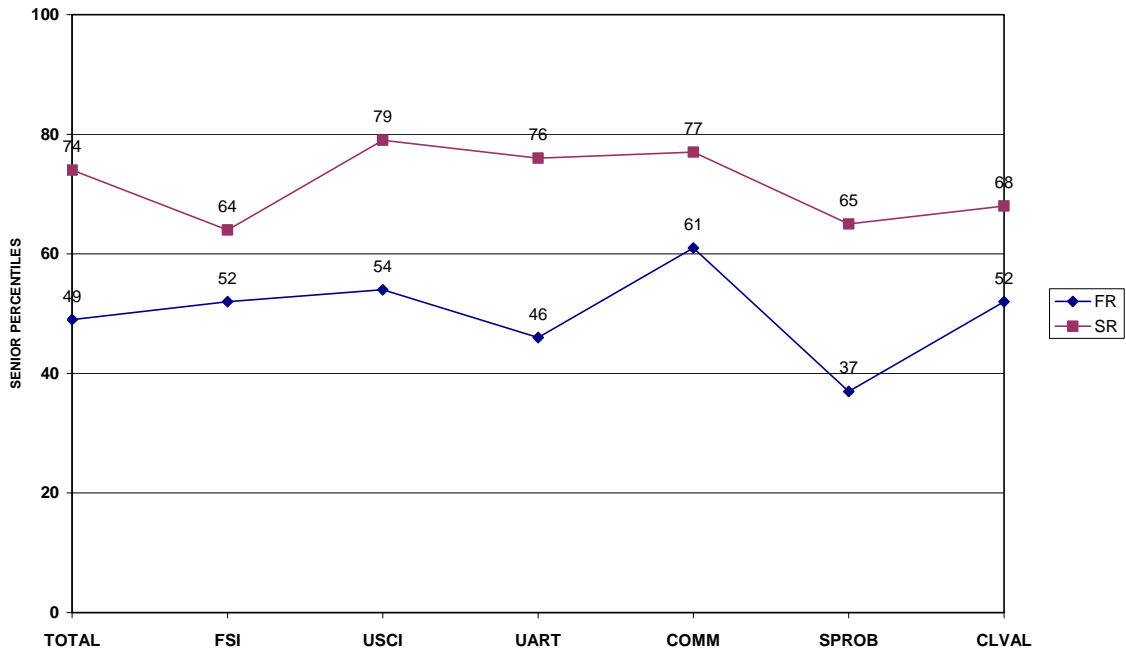


Figure 10

ACT COMP OBJECTIVE TEST
FINE ARTS (11 Year Aggregate)

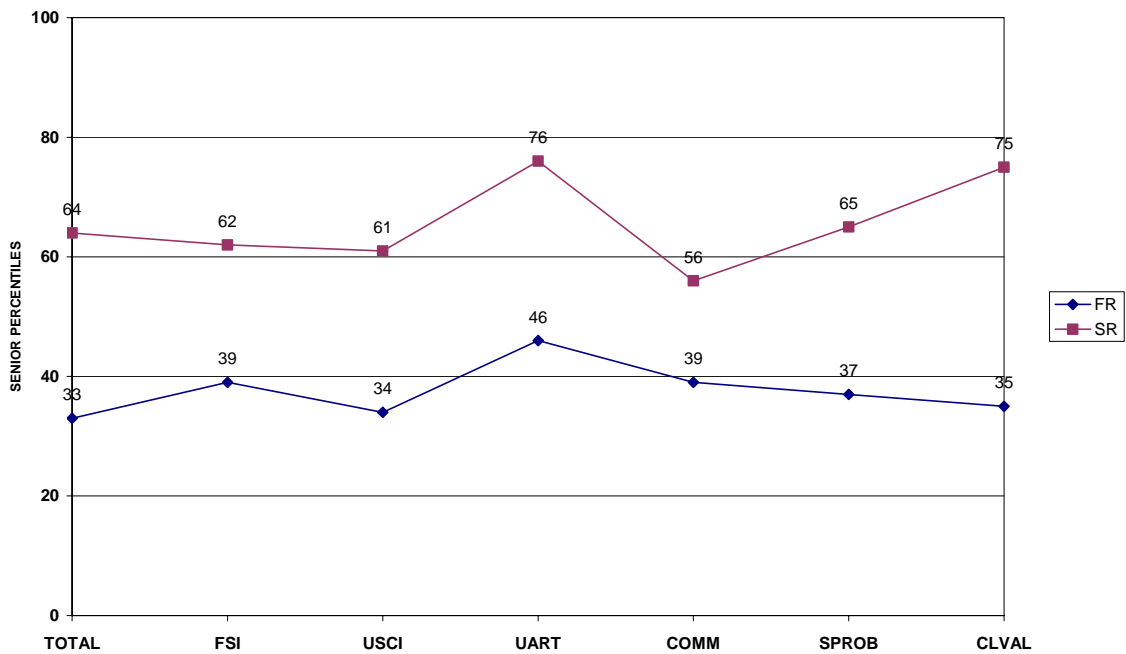


Figure 11

ACT COMP OBJECTIVE TEST
HEALTH & HUMAN SERVICES (11 Year Aggregate)

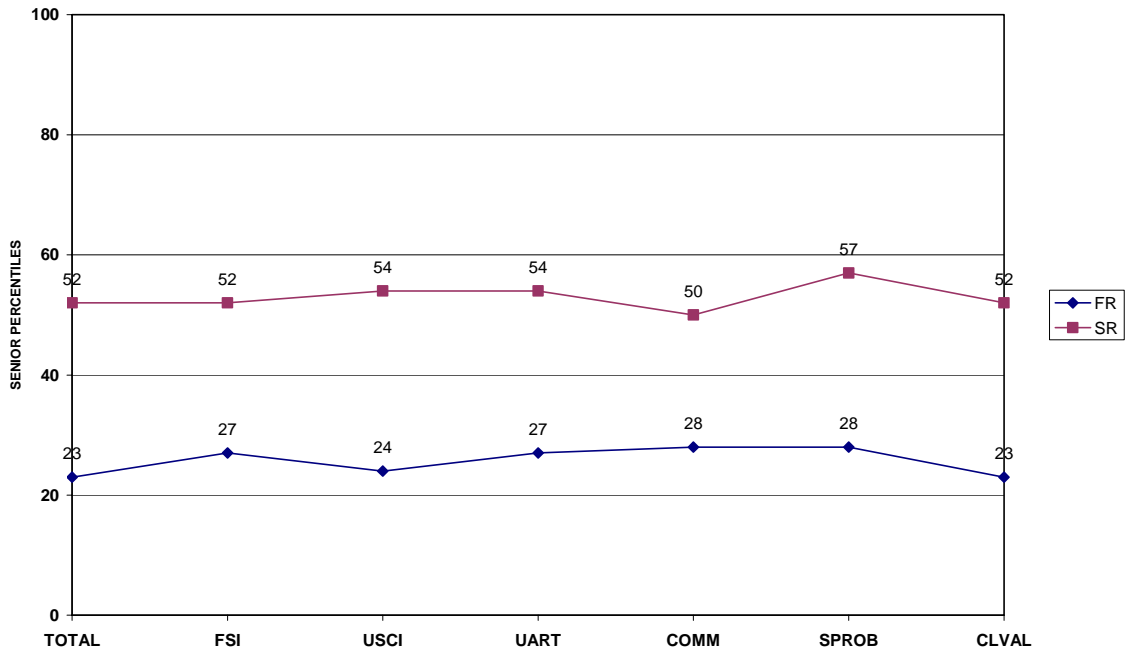


Figure 12

ACT COMP OBJECTIVE TEST
HONORS TUTORIAL (11 Year Aggregate)

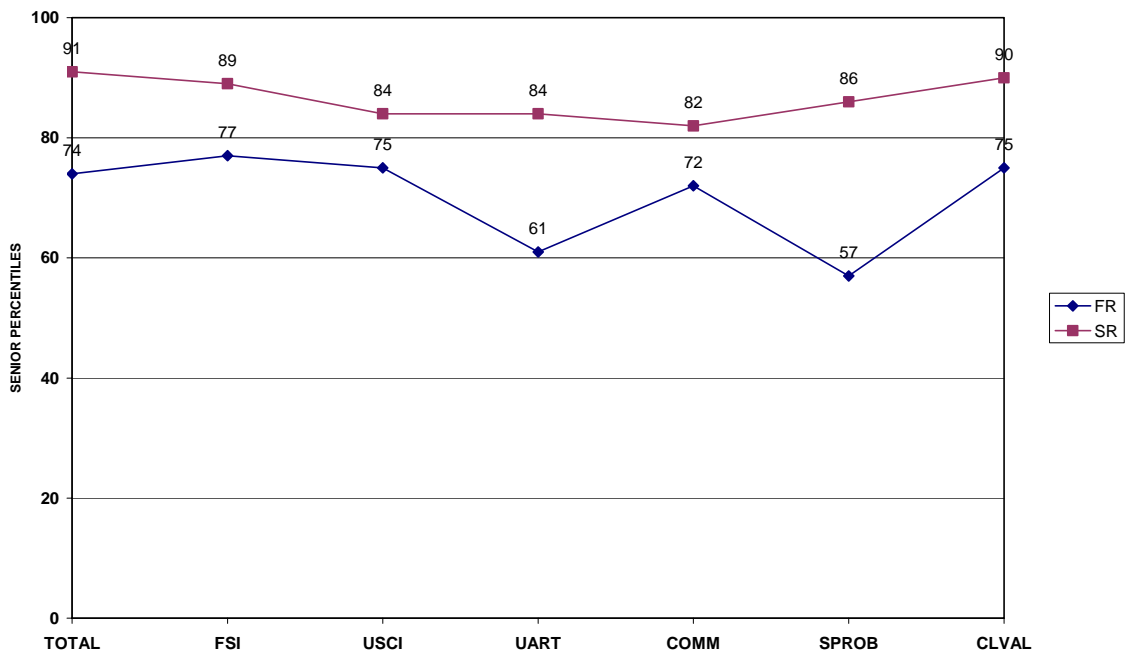
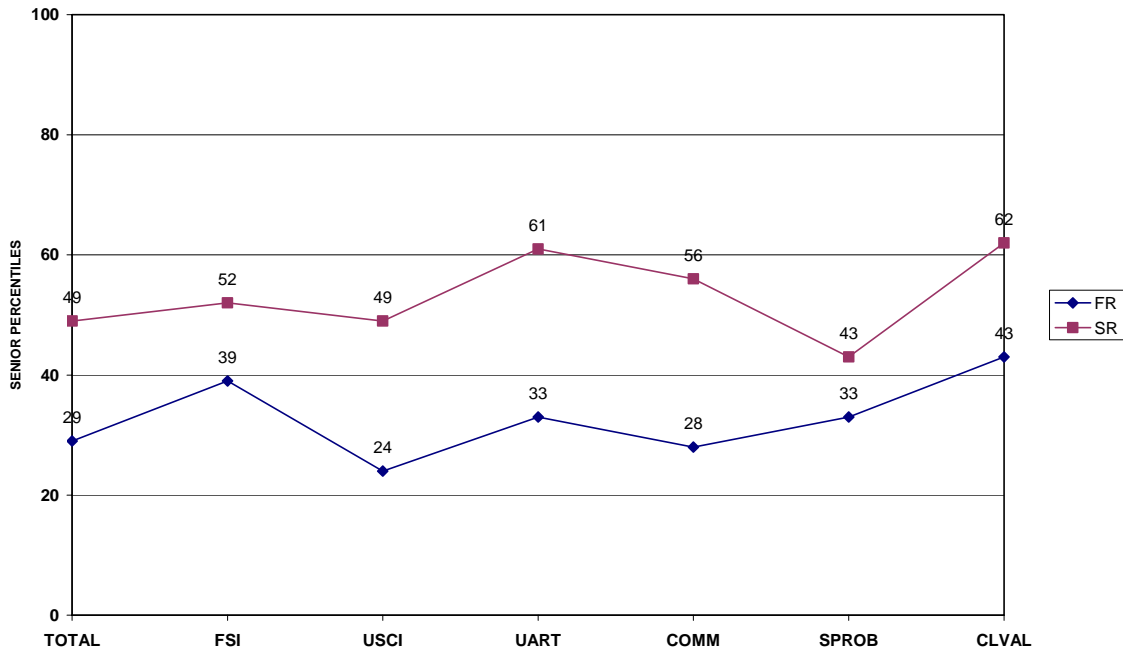


Figure 13

ACT COMP OBJECTIVE TEST
UNIVERSITY COLLEGE (11 Year Aggregate)



SUMMARY AND CONCLUSIONS

The COMP has been given at Ohio University since 1981 as part of the original Institutional Impact Project. The COMP first was given to samples of freshmen and samples of seniors. It is now given annually to a sample of freshmen and then to those students again as seniors. Using this design, longitudinal comparisons are made to assess learning gain. Through Ohio University data and information provided by validity studies done by ACT, one can assess the impact of the general education program on Ohio University students.

The general education program underwent a review implemented in 1979, and the COMP was introduced at Ohio University in 1981. The Tier I (English Composition and Quantitative Skills) component was required of students who were freshmen in 1979. The Tier II (breadth of knowledge or “distribution”) component was required of freshmen entering in 1981; these students were seniors in 1984-1985. The Tier III (senior synthesis) was required of freshmen entering in 1982; these students were seniors in 1985-1986, the first year the COMP was given to students who had taken the Tier III requirement.

University-wide selective admissions was implemented gradually beginning fall 1986.

However, it is not until fall 1988 that the selective admissions practice was stabilized to the point where it is currently. This is the rationale for dividing the COMP results into open admissions (1981 to 1987) and selective admissions (1988 to 1991) groups.

Significant score gains support generalizations about these results to the classes from which these students were sampled. Seniors who took the COMP before the three-tier general education requirements scored lower than students who took the COMP after the three-tier general education requirements were implemented. Seniors scored below the 50th percentile nationally before the three-tier general education program was implemented and at about the 66th percentile nationally after the general education program was implemented. Students admitted under selective admissions in the last four classes scored higher than students in the previous classes. Furthermore, selective admissions students who had completed the general education requirement scored higher than open admission students who had completed the general education requirement. Not only were the senior scores higher, but the freshman to senior learning gain also was higher.

Different score gains among the academic colleges suggests that students gain general education knowledge and skill value from the entire academic program, not just general education. Yet there was smaller score variability among the colleges for seniors than freshmen. This suggests that the common general education curriculum seniors have experienced helps smooth differences that exist in general education knowledge and skills as freshmen.

Four years of selective admissions classes have been tested as freshmen and as seniors. The 1992 seniors scored at the 65th percentile nationally. The 1993 seniors scored at the 74th percentile. The 1994 seniors scored at the 76th percentile. The 1995 seniors score at the 71st percentile. The results from the last four classes suggest that students of higher academic ability were able to demonstrate greater general education knowledge and skills as seniors, with greater learning gain. Additional selective admissions classes will be tested in the future, which will provide more information about the value added by the general education program among higher academic ability students.

Ohio University's students experience significant learning gain in general education from the freshman to the senior year. That gain has changed over the course of changes in the general education program and the freshman admissions policy.

APPENDIX
OHIO UNIVERSITY COLLEGE OUTCOMES MEASURES PROJECT
50 INSTITUTIONS INCLUDED IN THE
1992 SENIOR REFERENCE GROUP NORMS FOR SAMPLES
WITH ACT MEAN OF 21.4 OR ABOVE

Andrews University	Northwest Nazarene College
Bemidji State University	Ohio University
Bethel College (MN)	Ottawa University
Christopher Newport University	Roberts Wesleyan College
Colorado State University	Saint Ambrose University
Concordia University	Saint Mary College (KS)
Culver Stockton College	Saint Meinrad College
Fort Lewis College	South Dakota State University
Freed-Hardeman University	Southeast Missouri State University
George Fox College	Southwest Missouri State University
Grace College of the Bible	Spring Arbor College
Huntingdon College	Tennessee Technological University
Huntington College	Union College
Illinois College	University of Detroit
Iowa Wesleyan College	University of Mary (ND)
Jamestown College	University of Missouri-Kansas City
John Brown University	University of Missouri-Saint Louis
Juniata College	University of Montevallo
Keuka College	University of Tennessee-Chattanooga
King's College (PA)	University of Tennessee-Knoxville
Memphis State University	University of Wisconsin-LaCrosse
Mesa State College	Washington and Jefferson College
Missouri Southern State College	West Virginia Wesleyan College
Murray State University	Western Michigan University
Nazareth College of Rochester	William Jewell College