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ABSTRACT

Some comparative statistics are provided on the performance of Los Angeles City College (LACC) students on the 1973-74 examinations in X-Ray Technology given by the American Registry of Radiologic Technologists (ARRT). The data from the ARRT report are presented in five tables, as follows: (1) an overall summary; (2) California community colleges; (3) California institutions other than community colleges; (4) performance by state, all institutions; and (5) performance by state, community colleges only. The study data showed that: (1) the 29 LACC candidates were the 11th largest group of all 1,030 institutions in the U.S., 7th largest of the 99 U.S. community colleges, and 2nd largest of the 20 California community colleges; (2) 18 percent of the candidates are from community colleges, and in California, over half of the candidates are from community colleges; (3) community colleges averaged 14 candidates per institution (18 in California); other institutions averaged 7 candidates; (4) when compared with other California community colleges, LACC performance was slightly better in failure rate (7 percent compared with 9 percent) and slightly poorer in average scaled score (83.0 compared with 84.0); (5) California community college candidates performed better than their counterparts nationwide in both failure rate and average scaled score; and (6) when compared with other California institutions, California community colleges' performance was about equivalent; failure rate was slightly poorer; and average scaled score was slightly better. (DB)

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LOS ANGELES CITY COLLEGE

"A COMPARATIVE ANALYSIS OF PERFORMANCE ON THE 1973-
1974 ARRT X-RAY TECHNOLOGY EXAMINATIONS"

Research Study #74-9

Ben K. Gold
Research Office
November, 1974

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**"A COMPARATIVE ANALYSIS OF PERFORMANCE ON THE 1973-
1974 ARRT X-RAY TECHNOLOGY EXAMINATIONS"**

PURPOSE OF THE STUDY

This study was undertaken at the request of Miss Gertrude Pearson, Chairman of the Los Angeles City College Radiologic Technology Department, to provide some comparative statistics on the performance of IACC students on the 1973-1974 examinations in X-Ray Technology, given by the American Registry of Radiologic Technologists (ARRT).

PROCEDURE OF THE STUDY

Miss Pearson furnished to the Research Office a 24 page booklet listing by state and by institution a summary of performance of candidates taking either the November, 1973 or May, 1974 ARRT examination for the first time. For each of the 1,030 institutions the report indicated the number tested, number failed, percent failed and average scaled score for the candidates from that institution. These listings provide the data for the tables of the next section.

FINDINGS

The data from the ARRT report are presented in five tables, as follows: (1) an overall summary; (2) California Community Colleges; (3) California institutions other than Community Colleges; (4) performance by State, all institutions; and (5) performance by State, Community Colleges only. Average scaled score is a weighted average for the institutions indicated, and has been figured for all Community Colleges and for other institutions within California. Totals differ slightly (less than one half of one percent) from those available in the report.

TABLE 1 - Summary of Performance on ARRT X-Ray Technology Examinations (November, 1973 and May, 1974)

| No. of Institutions | No. Tested | No. Failed | % Failed | Average Scaled Score | Average No. tested per Institution | |
|---------------------------------|------------|------------|----------|----------------------|------------------------------------|------|
| Total United States | | | | | | |
| 1030 | 8009 | 1086 | 13.6% | N/A | 7.8 | |
| Community Colleges | 99 | 1420 | 213 | 15.0% | 82.0 | 14.3 |
| Hospitals and Universities | 931 | 6589 | 873 | 13.2% | N/A | 7.1 |
| Total California | | | | | | |
| 59 | 641 | 59 | 9.2% | 84.0 | 10.9 | |
| Community Colleges | 20 | 366 | 33 | 9.0% | 84.0 | 18.3 |
| Hospitals and Universities | 39 | 275 | 26 | 9.5% | 83.9 | 7.1 |
| Los Angeles City College | | | | | | |
| 1 | 29 | 2 | 6.9% | 83.0 | 29.0 | |

TABLE 2 - Performance on ARRT X-Ray Technology Examinations (November, 1973 and May, 1974): California Community Colleges

| College | No. Tested | No. Failed | % Failed | Average Standard Score |
|--------------------------------|------------|------------|-------------|------------------------|
| 1. Fullerton Junior College | 32 | 5 | 16 | 83 |
| 2. Los Angeles City College | 29 | 2 | 7 | 83 |
| 3. Merritt College | 29 | 0 | 0 | 86 |
| 4. San Francisco City College | 28 | 3 | 11 | 81 |
| 5. Fresno City College | 24 | 3 | 13 | 83 |
| 6. Long Beach City College | 24 | 2 | 8 | 82 |
| 7. Chaffey College | 23 | 4 | 17 | 84 |
| 8. Orange Coast College | 23 | 2 | 9 | 84 |
| 9. San Diego Mesa College | 21 | 1 | 5 | 83 |
| 10. Yuba College | 17 | 4 | 24 | 82 |
| 11. Santa Barbara City College | 16 | 0 | 0 | 85 |
| 12. Mt. San Antonio College | 15 | 0 | 0 | 89 |
| 13. Foothill College | 14 | 0 | 0 | 86 |
| 14. Bakersfield College | 13 | 1 | 7 | 86 |
| 15. Santa Rosa Junior College | 13 | 3 | 23 | 82 |
| 16. Merced College | 12 | 3 | 25 | 79 |
| 17. Canada College | 11 | 0 | 0 | 88 |
| 18. El Camino College | 11 | 0 | 0 | 88 |
| 19. Cabrillo College | 6 | 0 | 0 | 87 |
| 20. Antelope Valley College | 5 | 0 | 0 | 86 |
| TOTAL | 366 | 33 | 9.0% | 84.0 |

**TABLE 2 - Performance on ARRT X-Ray Technology Examinations
(November 1973 & May 1974): California Hospitals,
Universities, and Private Colleges**

| | No. Tested | No. Failed | % Failed | Average Standard Score |
|-----------------------------------------------------|---------------|---------------|-------------|---------------------------|
| 1. Loma Linda University | 20 | 1 | 5 | 83 |
| 2. L. A. VA Hospital, Wadsworth Hospital | 16 | 1 | 6 | 84 |
| 3. Pomona Valley Community Hospital | 16 | 0 | 0 | 88 |
| 4. UCLA Medical Center | 16 | 4 | 25 | 81 |
| 5. San Bernardino County General Hospital | 14 | 6 | 43 | 77 |
| 6. L. A. County General Hospital | 12 | 1 | 8 | 82 |
| 7. Stanford University Hospital | 12 | 0 | 0 | 85 |
| 8. U. S. Naval Hospital San Diego | 12 | 3 | 25 | 79 |
| 9. Children's Hospital LA | 10 | 1 | 10 | 87 |
| 10. Santa Monica Hospital | 10 | 1 | 10 | 82 |
| 11. San Joaquin General Hospital, Stockton | 9 | 0 | 0 | 91 |
| 12. University of California San Francisco | 8 | 0 | 0 | 89 |
| 13. Daniel Freeman Memorial Hospital, Inglewood | 7 | 0 | 0 | 84 |
| 14. Mercy Hospital Sacramento | 7 | 1 | 14 | 85 |
| 15. St. Francis Hospital Lynwood | 7 | 0 | 0 | 85 |
| 16. Cedars of Lebanon Los Angeles | 6 | 1 | 17 | 86 |
| 17. Huntington Memorial Hospital, Pasadena | 6 | 0 | 0 | 90 |
| 18. O'Connor Hospital San Jose | 6 | 0 | 0 | 87 |
| 19. St. Joseph Hospital Burbank | 6 | 0 | 0 | 88 |
| 20. Santa Clara Valley Medical Center San Jose | 6 | 0 | 0 | 86 |
| 21. Highland General Hospital Oakland | 5 | 1 | 20 | 80 |
| 22. Peninsula Hospital Medical Center Burlingame | 5 | 0 | 0 | 88 |
| 23. St. John's Hospital Oxnard | 5 | 1 | 20 | 78 |
| 24. San Jose Hospital & Medical Center | 5 | 0 | 0 | 85 |

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TABLE 3 (continued)

| | No. Tested | No. Failed | % Failed | Average Standard Score |
|----------------------------------------------------------|---------------|---------------|-------------|---------------------------|
| 25. Sutter Community Hospital Sacramento | 5 | 0 | 0 | 91 |
| 26. U. S. Naval Hospital Oakland | 5 | 2 | 40 | 74 |
| 27. University Hospital San Diego | 5 | 0 | 0 | 88 |
| 28. California Hospital Medical Center, LA | 4 | 0 | 0 | 84 |
| 29. Contra Costa County Hospital, Martinez | 4 | 0 | 0 | 81 |
| 30. Memorial Hospital Exeter | 4 | 0 | 0 | 83 |
| 31. Riverside Community Hospital | 4 | 0 | 0 | 83 |
| 32. St. John's Hospital Santa Monica | 4 | 0 | 0 | 90 |
| 33. Santa Barbara Cottage Hospital | 4 | 0 | 0 | 87 |
| 34. South Central Multipurpose Health Serv. Center LA | 3 | 0 | 0 | 88 |
| 35. General Hospital Eureka | 2 | 0 | 0 | 83 |
| 36. Hawthorne Community College Hawthorne | 2 | 1 | 1 | 50 |
| 37. Serra Memorial Hosp. Sun Valley | 1 | 0 | 0 | 75 |
| 38. South Coast Community Hospital S. Laguna | 1 | 0 | 0 | 90 |
| 39. U.S. Naval Hospital Camp Pendleton | 1 | 1 | 100 | 70 |
| TOTAL | 275 | 26 | 9.5% | 83.9 |

TABLE 4 - Performance on ABRT X-Ray Technology Examinations
(November 1973 & May 1974): by State, All Institutions

| State | No. of Insts. | Rank | No. Tested | Rank | No. Failed | % Failed | Aver. No. Tested per Institution |
|-------------------------|---------------|------|------------|------|------------|----------|----------------------------------|
| 1. Alabama | 13 | 26 | 111 | 26 | 8 | 7.2 | 8.5 |
| 2. Arizona | 8 | 32 | 43 | 36 | 5 | 11.6 | 5.4 |
| 3. Arkansas | 6 | 39 | 57 | 33 | 2 | 3.5 | 9.5 |
| 4. California | 59 | 4 | 641 | 1 | 59 | 9.2 | 10.9 |
| 5. Colorado | 9 | 29 | 118 | 24 | 15 | 12.7 | 13.1 |
| 6. Connecticut | 20 | 19 | 213 | 11 | 29 | 13.6 | 10.6 |
| 7. Delaware | 2 | 47 | 16 | 48 | 2 | 12.5 | 8.0 |
| 8. District of Columbia | 5 | 44 | 26 | 42 | 11 | 42.3 | 5.2 |
| 9. Florida | 27 | 12 | 213 | 12 | 25 | 11.7 | 7.9 |
| 10. Georgia | 26 | 13 | 180 | 16 | 29 | 16.1 | 6.9 |
| 11. Hawaii | 2 | 48 | 11 | 49 | 2 | 18.2 | 5.5 |
| 12. Idaho | 6 | 40 | 20 | 45 | 1 | 5.0 | 3.3 |
| 13. Illinois | 62 | 3 | 450 | 6 | 88 | 19.6 | 7.3 |
| 14. Indiana | 18 | 22 | 191 | 15 | 13 | 6.8 | 10.6 |
| 15. Iowa | 22 | 16 | 123 | 22 | 13 | 10.6 | 5.6 |
| 16. Kansas | 17 | 24 | 91 | 27 | 5 | 5.5 | 5.4 |
| 17. Kentucky | 17 | 25 | 112 | 25 | 13 | 11.6 | 6.6 |
| 18. Louisiana | 19 | 20 | 142 | 21 | 22 | 15.5 | 7.5 |
| 19. Maine | 9 | 30 | 74 | 29 | 3 | 4.1 | 8.2 |
| 20. Maryland | 21 | 18 | 208 | 13 | 40 | 19.2 | 9.9 |
| 21. Massachusetts | 41 | 7 | 310 | 8 | 18 | 5.8 | 7.6 |
| 22. Michigan | 37 | 8 | 372 | 7 | 54 | 14.5 | 10.0 |
| 23. Minnesota | 30 | 10 | 156 | 20 | 14 | 9.0 | 5.2 |
| 24. Mississippi | 8 | 33 | 43 | 37 | 8 | 18.6 | 5.4 |
| 25. Missouri | 22 | 17 | 196 | 14 | 26 | 13.3 | 8.9 |
| 26. Montana | 6 | 41 | 28 | 41 | 2 | 7.1 | 4.7 |
| 27. Nebraska | 8 | 34 | 44 | 35 | 5 | 11.4 | 5.5 |
| 28. Nevada | 3 | 46 | 25 | 43 | 2 | 8.0 | 8.3 |
| 29. New Hampshire | 8 | 35 | 33 | 39 | 4 | 12.1 | 4.1 |
| 30. New Jersey | 37 | 9 | 302 | 9 | 68 | 22.5 | 4.2 |
| 31. New Mexico | 6 | 42 | 19 | 46 | 5 | 26.3 | 3.2 |
| 32. New York | 56 | 5 | 487 | 5 | 70 | 14.4 | 8.7 |

(continued on next page)

TABLE 4 (continued)

| State | No. of Insts. | Rank | No. Tested | Rank | No. Failed | % Failed | Aver. No. Tested per Institution |
|--------------------|---------------|------|------------|------|------------|----------|----------------------------------|
| 33. North Carolina | 26 | 14 | 179 | 17 | 32 | 17.9 | 6.9 |
| 34. North Dakota | 8 | 36 | 32 | 40 | 5 | 15.6 | 4.0 |
| 35. Ohio | 76 | 2 | 511 | 4 | 71 | 13.9 | 6.7 |
| 36. Oklahoma | 10 | 28 | 62 | 32 | 10 | 16.1 | 6.2 |
| 37. Oregon | 4 | 45 | 69 | 30 | 3 | 4.3 | 17.2 |
| 38. Pennsylvania | 87 | 1 | 590 | 2 | 105 | 17.8 | 6.8 |
| 39. Rhode Island | 9 | 31 | 42 | 38 | 5 | 11.9 | 4.7 |
| 40. South Carolina | 11 | 27 | 78 | 28 | 10 | 12.8 | 7.1 |
| 41. South Dakota | 8 | 37 | 24 | 44 | 5 | 20.8 | 3.0 |
| 42. Tennessee | 18 | 23 | 159 | 18 | 17 | 10.7 | 8.8 |
| 43. Texas | 52 | 6 | 563 | 3 | 99 | 17.6 | 10.8 |
| 44. Utah | 6 | 43 | 51 | 34 | 3 | 5.9 | 8.5 |
| 45. Vermont | 2 | 49 | 17 | 47 | 0 | 0.0 | 8.5 |
| 46. Virginia | 24 | 15 | 157 | 19 | 21 | 13.4 | 6.5 |
| 47. Washington | 8 | 38 | 63 | 31 | 2 | 3.2 | 7.9 |
| 48. West Virginia | 19 | 21 | 123 | 23 | 28 | 22.8 | 6.5 |
| 49. Wisconsin | 30 | 11 | 226 | 10 | 6 | 2.7 | 7.5 |
| 50. Wyoming | 2 | 50 | 8 | 50 | 3 | 37.5 | 4.0 |
| TOTALS | 1030 | | 8609 | | 1086 | 13.6 | 7.8 |

TABLE 5 - Performance on AART X-Ray Technology Examinations (November 1973 & May 1974): By State, Community Colleges Only

| State | No. of Colleges | Rank | No. Tested | Rank | No. Failed | % Failed | Aver. Scaled Score | Aver. No. Tested per College |
|--------------------|-----------------|------|------------|------|------------|----------|--------------------|------------------------------|
| 1. Alabama | 2 | 11 | 24 | 15 | 3 | 12.5 | 81.9 | 12.0 |
| 2. Arizona | 2 | 12 | 14 | 17 | 3 | 21.4 | 78.9 | 7.0 |
| 3. California | 20 | 1 | 366 | 1 | 33 | 9.0 | 84.0 | 18.3 |
| 4. Colorado | 1 | 20 | 56 | 7 | 10 | 17.9 | 81.0 | 56.0 |
| 5. Connecticut | 4 | 6 | 63 | 6 | 10 | 15.9 | 82.4 | 15.8 |
| 6. Florida | 2 | 13 | 31 | 13 | 3 | 9.7 | 84.3 | 15.5 |
| 7. Hawaii | 1 | 21 | 8 | 20 | 2 | 25.0 | 80.0 | 8.0 |
| 8. Illinois | 12 | 2 | 134 | 4 | 30 | 22.4 | 81.4 | 11.2 |
| 9. Kansas | 2 | 14 | 12 | 18 | 1 | 8.3 | 81.2 | 6.0 |
| 10. Maine | 1 | 22 | 8 | 21 | 0 | 0.0 | 25.0 | 8.0 |
| 11. Maryland | 3 | 8 | 39 | 10 | 5 | 12.8 | 83.6 | 13.0 |
| 12. Massachusetts | 9 | 3 | 187 | 2 | 19 | 10.2 | 81.6 | 20.8 |
| 13. Mississippi | 1 | 23 | 4 | 27 | 0 | 0.0 | 78.0 | 4.0 |
| 14. Missouri | 2 | 15 | 27 | 14 | 3 | 11.1 | 74.0 | 13.5 |
| 15. Nevada | 1 | 24 | 7 | 23 | 0 | 0.0 | 83.0 | 7.0 |
| 16. New Jersey | 3 | 9 | 56 | 8 | 24 | 42.9 | 76.5 | 18.7 |
| 17. New York | 9 | 4 | 142 | 3 | 35 | 24.6 | 80.2 | 15.8 |
| 18. North Carolina | 1 | 25 | 8 | 22 | 3 | 37.5 | 76.0 | 8.0 |
| 19. Ohio | 3 | 10 | 38 | 11 | 5 | 13.2 | 81.3 | 12.7 |
| 20. Oklahoma | 1 | 26 | 3 | 28 | 1 | 33.3 | 77.0 | 3.0 |
| 21. Oregon | 2 | 16 | 64 | 5 | 2 | 3.1 | 85.6 | 32.0 |
| 22. South Carolina | 2 | 17 | 15 | 16 | 2 | 13.3 | 86.5 | 7.5 |
| 23. South Dakota | 2 | 18 | 7 | 24 | 3 | 42.9 | 79.1 | 3.5 |
| 24. Tennessee | 2 | 19 | 9 | 19 | 0 | 0.0 | 82.0 | 4.5 |
| 25. Texas | 5 | 5 | 38 | 12 | 7 | 18.4 | 81.5 | 7.6 |
| 26. Washington | 4 | 7 | 47 | 9 | 2 | 4.2 | 84.6 | 11.8 |
| 27. West Virginia | 1 | 27 | 6 | 26 | 4 | 66.7 | 71.0 | 6.0 |
| 28. Wyoming | 1 | 28 | 7 | 25 | 3 | 42.9 | 78.0 | 7.0 |
| TOTALS | 99 | | 1420 | | 213 | 15.0% | 82.0 | 14.3 |

CONCLUSIONS

Following are some observations on the findings:

- (1) The 29 candidates from L.A.C.C. represented the eleventh largest total of all of the 1,030 institutions in the U.S., the seventh largest total of the 99 U.S. Community Colleges, and the second largest total of 20 California Community Colleges.
- (2) About 10% of U.S. institutions sending candidates are Community Colleges, but about 18% of the candidates are from Community Colleges. In California, about a third of the institutions are Community Colleges, but over half of the candidates are from Community Colleges.
- (3) Community Colleges averaged 14 candidates per institution (18 in California); other institutions averaged 7 candidates per institution.
- (4) When compared with other California Community Colleges, L.A.C.C. performance was slightly better in failure rate (7% compared with 9%) and slightly poorer in average scaled score (83.0 compared with 84.0). Differences are not statistically significant.
- (5) California Community College candidates performed better than their counterparts nationwide in both failure rate (9% compared with 15%) and in average scaled score (84.0 compared with 82.0).
- (6) When compared with other California institutions (almost all hospitals and/or medical centers), California Community Colleges' performance was about equivalent; failure rate was slightly poorer (9.5% to 9.0%), average scaled score was slightly better (84.0 to 83.9).

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