

# OLDER AND YOUNGER GRADUATE STUDENTS: A COMPARISON OF GOALS, GRADES, AND GRE SCORES 

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Older and Younger Graduate Students:
A Comparison of Goals, Grades, and GRE Scores

Mary Jo Clark

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The 1980-81 GRE General Test verbal and quantitative ability scores were examined for four age groups of test takers--those age 22 or less, $23-29,30-39$, and 40 or more-and two groups returning to graduate study many years after completing the bachelor's degree--those 9-15 years beyond the baccalaureate, and those 16 or more years beyond the baccalaureate. Average verbal scores were about the same for all test takers regardless of age group or recency of undergraduate study; average quantitative scores were progressively lower across groups of increasing age or distance from the baccalaureate. Correlations between both verbal and quantitative scores and first-year graduate school grades were about the same across age groups of enrolled students, suggesting that the scores were equally useful in predicting the first-year graduate school grades of younger and older applicants. Undergraduate grade averages were lower for older than for younger students, and were less closely related to graduate school grades among the older student groups. Differences in fields of study, background characteristics, and attitudes toward test taking also are reported.

Older and Younger Graduate Students:
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The age composition of student groups on the campuses of American colleges and universities steadily became more varied during the 1970 s , with increasing numbers of older students at all levels, and this trend is predicted to continue at least through the 1980s. Shifts in the ages of undergraduate students have received the most attention in education circles and in the popular press, as reflected by increased interest in adult and continuing education programs, greater recognition of learning that takes place outside the classroom, concern for the problems of educational reentry, and more explicit attention to the needs of part-time students. But this greying of the campus has not been limited to undergraduates; there are also more older graduate students returning to the campus for the training required by career shifts, new developments in their fields of employment, and personal enrichment. For example, in 1975-76 almost half of the more than 200,000 men and women who took the GRE General Test were under 23 years of age (Hartle, Baratz, \& Clark, 1983); as this study will show, by 1980-81 only 39 percent of the test takers were at this age level. The number of GRE test takers 30 years of age or older increased from about 15 percent in $1975-76$ to 21 percent of the total in 1980-81. And the number of persons taking the GRE General Test nine years or more after completing their undergraduate degrees increased from 8 to 12 percent of the total, or from more than 18,000 potential "returning" graduate students in 1975-76 to almost 23,000 in 1980-81.

The men and women who take the GRE General Test in any given year represent only a portion of those who may plan to enter graduate study; many graduate programs do not require test scores as part of the admission process, and not all test takers will decide to continue their education. Nevertheless, data from the GRE program files represent a sizable sample of persons with varying backgrounds, interests, and abilities who are sufficiently interested in graduate study to register for and complete the GRE General Test. Also, graduate departments frequently request information about the appropriateness of test scores for older applicants. Therefore, this study was undertaken to examine the following questions:

[^0]1. How do the GRE scores of older test takers compare with the scores of test takers who are completing the bachelor's degree at the traditional age of 21 or 22?
2. What are the personal characteristics of test takers at different age levels?
3. How do the scores and characteristics of 1980-81 test takers compare with those of the test takers in 1975-76?
4. What is the relationship between traditional admission variables (GRE verbal and quantitative scores and undergraduate grades) and performance in the first year of graduate study for persons who are at different age levels when they begin graduate study?

Data for the following profiles of GRE test takers by age groups were the 203,131 records of men and women who took the GRE General Test at one of the six regularly scheduled national administrations during 1980-81 and who voluntarily answered at least one of the background information questions when they registered for the test. A copy of the background questions is included in this report as Appendix A; a full summary of responses may be found in Goodison (1982). Though the General Test in 1980-81 included a measure of analytical ability as well as tests of verbal and quantitative ability, the form of the analytical measure was changed the next year and the 1980-81 results have not been equated to more recent test results. Therefore, only the verbal and quantitative scores are considered in this report.

The personal and educational characteristics of the 1980-81 test takers are presented in some detail in the tables and text of this report. In general, the subjects represent prospective applicants to almost every field of graduate study. Other research (Oltman \& Hartnett, 1983) found that GRE General Test results are required or recommended by about 65 percent of the master's degree programs and about 87 percent of the doctoral degree programs in the United States. Also, a recent follow-up survey of a sample of 1979-80 test takers (Baird, 1982) found that 61 percent were attending graduate school in the intended field in the year following testing ( 68 percent were attending a graduate or professional school of some type) and that 58 percent of those attending were attending full time (Table 6, p. 16). Probably most of the 1980-81 test takers were planning to apply to or were already enrolled in a program that requires or recommends GRE test results. We do not know how many of them actually attended graduate school or whether they studied full or part time, but Baird's results suggest some reasonable estimates.

Age groups were defined to be consistent with the earlier study of GRE test performance in relation to age (Hartle et al., 1983): 22 or younger (the traditional age of college graduation) ; 23-29; and 30 or older (the "older students"). In addition, because of the larger number of older test takers in 1980-81, this report includes separate tabulations for those age $30-39$ and 40 or more. The report also examines the performance and characteristics of test takers $9-15$ years beyond completion of the bachelor's degree and 16 or more years beyond the bachelor's degree. These last two groups are subsets of the older test-taker groups and are of particular interest because they provide an opportunity to examine the performance and characteristics of men and women who are returning to university settings after a number of years in other activities. For example, test takers 9-15 years beyond the baccalaureate make up only 47 percent of the group age 30-39 and must consist mostly of those who completed their undergraduate degrees at age 21 or 22 and are now reentering academe. In contrast, most of the others in this age group have completed their bachelor's degrees more recently, suggesting that they started late or interrupted their academic careers or took longer than the usual four years to complete the undergraduate degree. Similarly, only half of those age 40 or more are 16 or more years beyond the bachelor's degree; the others in this group have completed their undergraduate degrees more recently. Other differences in these two ways of defining "older" students, by age or by years since the baccalaureate, will be indicated when discussing the research results.

A cross tabulation of age and years since receiving the bachelor's degree may be found in Table l. A comparison of these results with a similar cross tabulation of 1975-76 test takers (Hartle et al, 1983, Table 2, p. 5) indicates that the proportions of each age group earning the bachelor's degree at various points in time are quite stable, but the 1980-81 population has a substantially smaller number of test takers age 22 or less and larger number of test takers age 30 or more.

GRE Verbal and Quantitative Scores by Age Groups
The earlier study of GRE scores in relation to age (Hartle et al., 1983) found that the average verbal and quantitative scores of older test takers were somewhat lower than the average scores of traditionally aged college graduates, but that the differences in verbal scores were explained in large part by differences in the fields of study planned by those in the younger and older groups. Thus, when the scores of younger and older test takers planning graduate study in the same

Table 1

Age and Years Since the Bachelor's Degree ${ }^{\text {a }}$

a Test takers who failed to answer the age or degree date questions are omitted from the table. The population is 203,131 men and women who took the GRE General Test at one of six regularly scheduled national administrations during $1980-81$ and who responded to one or more background questions.
fields were compared, the average verbal score of the older group usually was about the same as the average verbal score of the younger group. This was not true for the average scores of the age groups on the quantitative measure; mean GRE quantitative scores were lower for older test takers in every field, and the size of the difference between the younger and older group mean quantitative scores tended to increase with increasing age of the group. Because of these earlier findings, the analyses for this report were conducted separately for each of the 11 major areas of academic study that are used in other reports of GRE scores (e.g., Goodison, 1982). The specific fields included in each academic area are listed in Appendix B. The pattern of GRE verbal and quantitative scores across age groups was examined separately within each curricular area. The results of these analyses are presented in Table 2. The mean verbal and quantitative scores across age groups for four major clusters of fields (humanities, social sciences, biological sciences, and physical sciences) also are presented in graphic form in Figures 1 through 4 for easier interpretation.

An examination of Table 2 and Figures 1 through 4 indicates that the mean verbal scores of test takers planning graduate study in the humanities are about the same in each of the four age groups, are higher for older test takers planning graduate study in the social sciences, remain about the same across age groups for test takers planning to study in the biosciences and health fields, and are somewhat lower for older test takers planning graduate study in applied biology, engineering, or physical science fields. It should be noted that these latter fields in the physical and applied biological science areas account for a very small percentage of the older test takers--about 11 percent of those age 30-39 and only about 5 percent of those age 40 or more.

The patterns of mean quantitative scores across the curricular areas present a different picture. Though the levels of mean quantitative scores vary considerably--much higher in the physical and biological sciences than in the humanities and social sciences-in each group, there is a clear trend toward lower scores in the older age groups.

Table 2 and Figures 1 through 4 also include the mean verbal and quantitative scores of test takers $9-15$ years and 16 or more years beyond the bachelor's degree. In many cases, the mean verbal scores of the men and women who finished their undergraduate studies more than 16 years earlier are the highest of any age group. In general, both the mean verbal and mean quantitative scores of these groups parallel the withinfield scores of men and women age $30-39$ and 40 or more but at a

Table 2
Mean GRE Scores by Intended Graduate Major Area, Age, and Years Since Degree ${ }^{\text {a }}$

|  | Total N | Age |  |  |  | Years Since Baccalaureate |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | $\begin{aligned} & 22 \text { or } \\ & \text { less } \end{aligned}$ | 23-29 | 30-39 | 40 or more | 9-15 | 16 or more |
| Number of Respondents | 203,131 | 77,837 | 81,209 | 32,403 | 9,887 | 16,253 | 6,939 |
| \% of Row | 100 | 39 | 40 | 16 | 5 | 8 |  |

I. Humanities ${ }^{b}$
A. Arts
B. Other Humanities

| \% of Col. N | 3 |
| ---: | ---: |
| GRE-V | 493 |
| GRE-Q | 481 |
| \% of Col. N | 9 |
| GRE-V | 530 |
| GRE-Q | 509 |


| 3 | 3 |
| ---: | ---: |
| 496 | 490 |
| 502 | 478 |
| 9 | 9 |
| 532 | 525 |
| 525 | 511 |

525
511

| A. Education | \% of | Col. N | 16 | 8 | 16 | 29 | 37 | 37 | 44 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | GRE-V | 448 | 436 | 436 | 468 | 464 | 477 | 487 |
|  |  | GRE-Q | 449 | 471 | 450 | 449 | 409 | 461 | 430 |
| B. Other Social Sciences | \% of | Col. N | 11 | 10 | 11 | 12 | 13 | 12 | 12 |
|  |  | GRE-V | 481 | 474 | 476 | 503 | 500 | 525 | 537 |
|  |  | GRE-Q | 482 | 494 | 483 | 473 | 434 | 490 | 462 |
| C. Behavioral Sciences | \% of | Col. N | 17 | 18 | 16 | 15 | 14 | 13 | 11 |
|  |  | GRE-V | 506 | 509 | 499 | 515 | 521 | 541 | 557 |
|  |  | GRE-Q | 511 | 526 | 510 | 489 | 444 | 510 | 478 |
| Biological Sciences |  |  |  |  |  |  |  |  |  |
| A. Biosciences | \% of | Col. N | 6 | 8 | 6 | 3 | 1 | 2 | 1 |
|  |  | GRE-V | 508 | 514 | 500 | 506 | 505 | 516 | 537 |
|  |  | GRE-Q | 569 | 584 | 559 | 528 | 495 | 541 | 515 |
| B. Health Sciences | \% of | Col. N | 9 | 7 | 10 | 10 | 9 | 8 | 8 |
|  |  | GRE-V | 484 | 479 | 481 | 504 | 484 | 518 | 520 |
|  |  | GRE-Q | 504 | 533 | 505 | 481 | 420 | 499 | 451 |


| A. Education | \% of | Col. N | 16 | 8 | 16 | 29 | 37 | 37 | 44 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | GRE-V | 448 | 436 | 436 | 468 | 464 | 477 | 487 |
|  |  | GRE-Q | 449 | 471 | 450 | 449 | 409 | 461 | 430 |
| B. Other Social Sciences | \% of | Col. N | 11 | 10 | 11 | 12 | 13 | 12 | 12 |
|  |  | GRE-V | 481 | 474 | 476 | 503 | 500 | 525 | 537 |
|  |  | GRE-Q | 482 | 494 | 483 | 473 | 434 | 490 | 462 |
| C. Behavioral Sciences | \% of | Col. N | 17 | 18 | 16 | 15 | 14 | 13 | 11 |
|  |  | GRE-V | 506 | 509 | 499 | 515 | 521 | 541 | 557 |
|  |  | GRE-Q | 511 | 526 | 510 | 489 | 444 | 510 | 478 |
| Biological Sciences |  |  |  |  |  |  |  |  |  |
| A. Biosciences | \% of | Col. N | 6 | 8 | 6 | 3 | 1 | 2 | 1 |
|  |  | GRE-V | 508 | 514 | 500 | 506 | 505 | 516 | 537 |
|  |  | GRE-Q | 569 | 584 | 559 | 528 | 495 | 541 | 515 |
| B. Health Sciences | \% of | Col. N | 9 | 7 | 10 | 10 | 9 | 8 | 8 |
|  |  | GRE-V | 484 | 479 | 481 | 504 | 484 | 518 | 520 |
|  |  | GRE-Q | 504 | 533 | 505 | 481 | 420 | 499 | 451 |


| A. Education | \% of | Col. N | 16 | 8 | 16 | 29 | 37 | 37 | 44 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | GRE-V | 448 | 436 | 436 | 468 | 464 | 477 | 487 |
|  |  | GRE-Q | 449 | 471 | 450 | 449 | 409 | 461 | 430 |
| B. Other Social Sciences | \% of | Col. N | 11 | 10 | 11 | 12 | 13 | 12 | 12 |
|  |  | GRE-V | 481 | 474 | 476 | 503 | 500 | 525 | 537 |
|  |  | GRE-Q | 482 | 494 | 483 | 473 | 434 | 490 | 462 |
| Behavioral Sciences | \% of | Col. N | 17 | 18 | 16 | 15 | 14 | 13 | 11 |
|  |  | GRE-V | 506 | 509 | 499 | 515 | 521 | 541 | 557 |
|  |  | GRE-Q | 511 | 526 | 510 | 489 | 444 | 510 | 478 |
| Biological Sciences |  |  |  |  |  |  |  |  |  |
| Biosciences | \% of | Col. N | 6 | 8 | 6 | 3 | 1 | 2 | 1 |
|  |  | GRE-V | 508 | 514 | 500 | 506 | 505 | 516 | 537 |
|  |  | GRE-Q | 569 | 584 | 559 | 528 | 495 | 541 | 515 |
| B. Health Sciences | \% of | Col. N | 9 | 7 | 10 | 10 | 9 | 8 | 8 |
|  |  | GRE-V | 484 | 479 | 481 | 504 | 484 | 518 | 520 |
|  |  | GRE-Q | 504 | 533 | 505 | 481 | 420 | 499 | 451 |
|  |  |  |  |  |  |  |  |  |  |

III. Biological Sciences

| A. Education | \% of | Col. N | 16 | 8 | 16 | 29 | 37 | 37 | 44 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | GRE-V | 448 | 436 | 436 | 468 | 464 | 477 | 487 |
|  |  | GRE-Q | 449 | 471 | 450 | 449 | 409 | 461 | 430 |
| B. Other Social Sciences | \% of | Col. N | 11 | 10 | 11 | 12 | 13 | 12 | 12 |
|  |  | GRE-V | 481 | 474 | 476 | 503 | 500 | 525 | 537 |
|  |  | GRE-Q | 482 | 494 | 483 | 473 | 434 | 490 | 462 |
| C. Behavioral Sciences | \% of | Col. N | 17 | 18 | 16 | 15 | 14 | 13 | 11 |
|  |  | GRE-V | 506 | 509 | 499 | 515 | 521 | 541 | 557 |
|  |  | GRE-Q | 511 | 526 | 510 | 489 | 444 | 510 | 478 |
| Biological Sciences |  |  |  |  |  |  |  |  |  |
| A. Biosciences | \% of | Col. N | 6 | 8 | 6 | 3 | 1 | 2 | 1 |
|  |  | GRE-V | 508 | 514 | 500 | 506 | 505 | 516 | 537 |
|  |  | GRE-Q | 569 | 584 | 559 | 528 | 495 | 541 | 515 |
| B. Health Sciences | \% of | Col. N | 9 | 7 | 10 | 10 | 9 | 8 | 8 |
|  |  | GRE-V | 484 | 479 | 481 | 504 | 484 | 518 | 520 |
|  |  | GRE-Q | 504 | 533 | 505 | 481 | 420 | 499 | 451 |

Mean GRE Scores by Intended Graduate Major Area, Age, and Years Since Degree


Table 2 (cont.)
Mean GRE Scores by Intended Graduate Major Area, Age, and Years Since Degree

|  |  | $\begin{gathered} \text { Total } \\ \mathrm{N} \end{gathered}$ | Age |  |  |  | Years Since Baccalaureate |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | 22 or less | 23-29 | 30-39 | $\begin{aligned} & 40 \text { or } \\ & \text { more } \end{aligned}$ | 9-15 | $\begin{aligned} & 16 \text { or } \\ & \text { more } \end{aligned}$ |
|  | Number of Respondents \% of Row | $\begin{array}{r} 203,131 \\ 100 \end{array}$ | $\begin{array}{r} 77,837 \\ 39 \end{array}$ | $\begin{array}{r} 81,209 \\ 40 \end{array}$ | $\begin{array}{r} 32,403 \\ 16 \end{array}$ | $\begin{array}{r} 9,887 \\ 5 \end{array}$ | $\begin{array}{r} 16,253 \\ 8 \end{array}$ | $6,939$ <br> 4 |
| VIII. Total | $\begin{array}{r} \text { \% of Col. N } \\ \text { GRE-V } \\ \text { GRE-Q } \end{array}$ | $\begin{aligned} & 100 \\ & 485 \\ & 520 \end{aligned}$ | $\begin{aligned} & 100 \\ & 496 \\ & 550 \end{aligned}$ | $\begin{aligned} & 100 \\ & 474 \\ & 517 \end{aligned}$ | $\begin{aligned} & 100 \\ & 491 \\ & 485 \end{aligned}$ | $\begin{aligned} & 100 \\ & 486 \\ & 430 \end{aligned}$ | $\begin{aligned} & 100 \\ & 504 \\ & 496 \end{aligned}$ | $\begin{aligned} & 100 \\ & 512 \\ & 456 \end{aligned}$ |
| Men | $\begin{array}{r} \text { \% of Col. } \mathrm{N} \\ \text { GRE-V } \\ \text { GRE-Q } \end{array}$ | $\begin{array}{r} 46 \\ 484 \\ 563 \end{array}$ | 44 505 602 | $\begin{array}{r} 50 \\ 470 \\ 555 \end{array}$ | $\begin{array}{r} 44 \\ 477 \\ 520 \end{array}$ | $\begin{array}{r} 30 \\ 474 \\ 473 \end{array}$ | $\begin{array}{r} 42 \\ 497 \\ 536 \end{array}$ | $\begin{array}{r} 30 \\ 504 \\ 505 \end{array}$ |
| Women | $\begin{array}{r} \text { \% of } \begin{array}{r} \text { Col. } \\ \text { GRE-V } \\ \text { GRE-Q } \end{array} \end{array}$ | $\begin{array}{r} 54 \\ 486 \\ 484 \end{array}$ | $\begin{array}{r} 56 \\ 488 \\ 510 \end{array}$ | $\begin{array}{r} 50 \\ 478 \\ 479 \end{array}$ | $\begin{array}{r} 55 \\ 503 \\ 458 \end{array}$ | $\begin{array}{r} 69 \\ 490 \\ 410 \end{array}$ | $\begin{array}{r} 58 \\ 509 \\ 467 \end{array}$ | $\begin{array}{r} 70 \\ 516 \\ 435 \end{array}$ |

$\mathrm{a}_{\text {Based on }}$ GRE test takers, September 1980 to June 1981 , who completed the GRE General Test and the background questionnaire.
${ }^{b}$ Disciplines included in each area are identified in Appendix B. Mean test scores by age groups for each discipline may be found in Appendix $C$.

Figure 1
Humanities Fields:
Mean Test Scores by Age and Years
Since Baccalaureate


Figure 2
Social Science Fields:
Mean Test Scores by Age and Years
Since Baccalaureate


Figure 3
Biological Sciences Fields:
Mean Test Scores by Age and Years
Since Baccalaureate


Figure 4
Physical Science Fields:
Mean Test Scores by Age and Years
Since Baccalaureate

slightly higher level. This finding is consistent with the status of these groups as highly self-selected adults who are returning to further study several years after completing their undergraduate degrees.

The relatively higher average test scores of test takers $9-15$ and 16 or more years beyond the bachelor's degree raise interesting questions about the most appropriate way to define "older" graduate students. These groups are quite different from those of the same ages who have completed undergraduate degrees more recently. For example, findings not shown in Table 2 indicate that the group 16 or more years beyond the baccalaureate are almost all people in their late 30's and beyond who completed their college degrees "on schedule" in 1965 or earlier. Seventy percent of them are women, suggesting that many are returning to graduate study after time out for homemaking and child rearing. More of them attended private than public undergraduate institutions when compared to the group 40 years of age or older ( $41 \% \mathrm{vs} .33 \%$ ) ; more of them have already attended graduate school ( $60 \%$ vs. $49 \%$ ) ; more of them indicated a Ph.D. degree objective ( $52 \%$ vs. $45 \%$ for the men, $32 \%$ vs. $29 \%$ for the women) ; more of them grew up in homes with mothers and fathers who had college educations; fewer of them are members of minority groups ( $89 \%$ vs $86 \%$ white.) In short, classifiction by years since the bachelor's degree results in groups of students who completed college at the traditional age and are"returning" to graduate study, while classification by age results in a greater variety of personal backgrounds and educational experiences.

Test takers age 30 or more make up very different proportions of potential graduate students in the various fields. They are most heavily represented in education, where 58 percent of all prospective graduate students in this sample are 30 years of age or older and 28 percent are 40 or more. The next largest representations are in other humanities with 40 percent age 30 or more and 10 percent 40 or more and the behavioral sciences with 35 percent age 30 or more and 8 percent 40 or more. The smallest representations of older applicants are in the physical sciences ( 15 percent age 30 or more) and engineering ( 17 percent ages 30 or more). In all other major curricular areas, at least 20 percent of the potential students were 30 years of age or more.

Figure 5 diagrams the mean verbal and quantitative scores of men and women by age groups across all curricular areas. (The data for Figure 5 may be found at the end of Table 2.) The mean verbal scores of women age 30 or more are higher than the verbal scores of women age 22 or less; the mean verbal scores of the older age groups of men are slightly lower than

Figure 5

GRE Scores by Age and Sex
1980-1981

the mean verbal score of the youngest group, but even for the men, the mean verbal scores of returning students (e.g., those at least nine years beyond the baccalaureate degree) are at about the same level as the mean score of the youngest group. Mean quantitative scores are lower by about the same amount from one age group to another for both women and men.

The standard deviations of the verbal and quantitative scores by age groups are omitted from Table 2 because they showed very little variation from group to group. The total group verbal score standard deviation was 122; the total group quantitative score standard deviation was 132. In general, the standard deviations are somewhat larger for men than for women (cf., low 130s for men, llos to 120 s for women) but are substantially the same within sex across age groups.

Readers interested in the mean verbal and quantitative scores of test takers planning graduate study in specific disciplines can find these data by age group and sex in Appendix $C$.

In summary, though there are some fluctuations in mean verbal scores across age groups within curricular areas, the patterns of scores in the 1980-81 data strengthen the tentative finding from 1975-76 data. That is, over all test takers planning graduate study in a particular field, the average GRE verbal score of older students tended to be as high as or higher than the average GRE verbal score of traditional-aged students planning to enter the same field directly from college. Undergraduates who complete the bachelor's degree at older ages may tend to score somewhat lower, and the highly self-selected persons returning to study after several years away from academe tend to score higher than average on the verbal measure. In general, however, the conclusion is one of consistency across age groups and across number of years since the bachelor's degree for the GRE verbal measure.

The picture for the quantitative measure is similarly consistent, but different in that the mean scores are progressively lower at each advancing age level. The overall difference between those age 22 or less and those age 40 or more is about 120 points or one standard deviation, and the difference is slightly larger for men than for women. The average quantitative scores of older test takers planning to study in the physical sciences are much higher than for candidates in any other curricular area, but even in these fields the average score for the oldest group is about 70 points below the average score for the youngest group.

## Characteristics of GRE Test Takers by Age Group

Marked differences in the backgrounds and interests of GRE test takers at different age levels are to be expected. Most of the youngest group, those age 22 or less, are completing or have completed their undergraduate studies at the traditional time and are making major career decisions about graduate study or work. They made up 39 percent of the test takers in 1980-81 (see Table 2). Many of the best students in undergraduate programs probably are in this group, encouraged by their professors and families to proceed directly to graduate or professional study. The most popular area of study is in the behavioral sciences. Students in the sciences, particularly, tend to continue graduate study immediately after completing the undergraduate degree, and this is reflected in the smaller proportions of older test takers who indicated an intended graduate major in the biological or physical sciences, as reported in Table 2.

Test takers age 23-29 made up 40 percent of the 1980-81 total. About a third of this group are just finishing college; others are returning within eight years of completing their undergraduate studies (see Table 3). They continue to be spread over a wide variety of fields, with the largest number in education and the behavioral sciences--16 percent each (see Table 2). Work on master's degrees directly related to professional preparation or to upgrading job skills probably accounts for a large proportion of this group.

The two older groups, age 30 to 39 ( $16 \%$ of the total number) and 40 or more ( $5 \%$ of the total), are concentrated very heavily in the social sciences, with 56 percent of those in their $30^{\prime}$ s and 2 out of 3 of those 40 or more planning study in education or another social science field. Many of these test takers are probably changing careers, or are returning to graduate study after several years away from academe in order to return to the job market.

Selected characteristics of 1980-81 GRE test takers in each of the four age groups, as indicated by their responses to the background questions that accompanied registration for the GRE General Test, are reported in Table 3. Almost all of those age 22 or less had received the bachelor's degree within one year of testing or were still undergraduates (about $5 \%$ of this group). Two out of three of those age 23-29 completed their bachelor's degrees two to eight years prior to testing; the remainder of this age group (37\%) completed their undergraduate degrees within the last year, suggesting that they started college as adults or took longer than four or five years to complete

Table 3

Characteristics of GRE Test Takers by Age Groups

|  | Age |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & 22 \text { or } \\ & \text { less } \end{aligned}$ | 23-29 | 30-39 | 40 or more |
| Number of cases ${ }^{\text {a }}$ | 76,989 | 79,524 | 31,580 | 9,620 |
| Mean year of receipt of bachelor's degree | 1981 | 1978 | 1973 | 1967 |
| Mean age | 22 | 26 | 34 | 47 |
| \% with bachelor's degree: |  |  |  |  |
| within one year | 98\% | 37\% | 18\% | 21\% |
| 2-8 years earlier | 2 | 63 | 29 | 19 |
| 9-15 years earlier | 0 | 1 | 47 | 10 |
| 16 or more years earlier | 0 | 0 | 7 | 50 |
| \% from public undergraduate institutions | 57 | 72 | 72 | 66 |
| \% who are female | 56 | 50 | 55 | 69 |
| \% who identified themselves as: |  |  |  |  |
| American Indian | 0.4 | 0.7 | 1.0 | 0.6 |
| Black | 6.0 | 6.2 | 7.2 | 8.0 |
| Mexican American | 0.8 | 1.5 | 1.8 | 1.5 |
| Oriental | 2.2 | 1.5 | 1.1 | 1.0 |
| Puerto Rican | 0.8 | 0.9 | 0.7 | 0.5 |
| Other Hispanic | 0.8 | 0.9 | 0.6 | 0.9 |
| White | 87.2 | 86.2 | 85.6 | 85.8 |
| Other | 1.8 | 2.3 | 2.0 | 1.4 |
| \% with degree objective Ph.D. or beyond | 40 | 34 | 38 | 34 |
| \% with no previous graduate study | 96 | 73 | 53 | 51 |
| \% with a master's degree, not currently enrolled | 1 | 9 | 21 | 22 |
| \% currently enrolled in graduate study | 4 | 21 | 27 | 30 |
| \% with A or A- grades in undergraduate major | 51 | 41 | 38 | 41 |
| \% who would prefer to attend graduate school in the South or West | 44 | 56 | 62 | 68 |

$\mathrm{a}_{\text {The }}$ reported number is those who answered the "age" and "years since bachelor's degree" questions and who took the GRE General Test between September 1980 and June 1981.
their degrees. The oldest two groups of test takers, those 30-39 and 40 or more, also represent a mixture of individuals who were late in completing their undergraduate degrees (about $40 \%$ ) and those who are returning to graduate study nine years or more after completing the bachelor's degree ( $55 \%$ to $60 \%$ ).

Most of the test takers in each age group received their undergraduate degrees from public institutions; private institutions were represented most frequently in the youngest and oldest age groups. Half or more of the test takers in each group were women, increasing to almost 7 women out of 10 in the group age 40 or more. It seems likely that the high proportion of women in the 40 and over group reflects the tendency for many women to return to study and employment after their children are grown.

There is some tendency for the older age groups to include larger percentages of persons who identify themselves as racial or ethnic minorities but, as indicated in Table 3, most of the test takers in each group ( $85 \%$ to $87 \%$ ) were white.

More than 1 in 3 test takers in each age group indicated that their eventual graduate degree objective was the doctorate or beyond. The differences reported in Table 3 largely reflect differences in the sex compositions of the groups (data not tabled), with generally 45 percent of the men and 30 to 34 percent of the women aspiring to the doctorate. Only the group age 23-29 varied from this pattern, with somewhat lower levels of 40 percent of the men and 28 percent of the women in this group indicating interest in doctoral study.

About half of the test takers 30 years of age or older had already attended graduate school half time or more. About 1 in 5 of these older test takers said that they had already completed a master's degree; about 3 in 10 were currently enrolled in the first or second year of graduate study. In the older age groups, more men than women had attended graduate school half time or more ( $54 \%$ vs. $46 \%$ ).

The undergraduate grades of older test takers were somewhat lower than the undergraduate grades of those age 22 or less, as indicated by smaller percentages reporting $A$ or $A-$ grades in courses in their undergraduate major fields. Men and women age 22 or less reported $A$ or $A^{-}$grades in about the same proportions (51\%). In the other three groups, women reported higher grades than men, with about 34 percent of the men reporting A or A- grades and 44 percent of the women reporting major field grades at this level. The higher grades of younger test takers may reflect the national trend toward grade inflation, with lower grade averages characteristic of graduates in earlier years.

Test takers were asked to indicate the geographic region in which they would prefer to attend graduate school. About 33 percent of those in the youngest group selected the Northeast or East, while about 44 percent selected the South or West. For those 30 years of age or more, the percentage interested in the Northeast or East was lower (about 17 percent), while more than 60 percent said they would prefer graduate study in the South or West. There is no way to know from the data whether these preferences reflect current residency, migration plans, or wishful thinking. They do suggest, however, that universities in the South and West may have proportionately more applications for admission from older and returning students.

A comparison of the intended graduate major areas by age in 1980-81 (Table 2) with similar tabulations for 1975-76 (Hartle et al., 1983, p. 13) indicates that more than 1 out of 3 of the 1980-81 older groups anticipated graduate study in education and that at least 40 percent of those nine years or more beyond the bachelor's degree were in this field, compared to 29 percent of those age 30 or more in 1975-76. Across all age groups, the distributions of intended major areas were about the same in 1980-81 and 1975-76 in the arts, other humanities, other social sciences, and physical science. The percentages of test takers planning graduate study in the behavioral sciences were lower in 1980-81 than in 1975-76 for all age groups (down from $24 \%$ to $18 \%$ among those 22 or less and from $24 \%$ to $15 \%$ among those 30 or more). The anticipated enrollments in biological sciences also were down slightly at each age level, though the anticipated enrollments were up by one or two percentage points in the other science areas of health, applied biology, engineering, and the mathematical sciences.

In summary, as in 1975-76, most of the older test takers in 1980-81 planned to study in education, other social or behavioral sciences, or health fields (about $70 \%$ of those 30 or more compared to about $42 \%$ of those 22 or less) while the sciences attract mostly younger students (about $30 \%$ of those 22 or less vs. $12 \%$ of those 30 or more). Many of the older test takers had already completed some graduate study; on the other hand, the number of years since most recent enrollment almost certainly is higher for this group. The undergraduate grades of the older groups tended to be lower, probably due in large part to a national trend toward higher undergraduate grading scales in recent years. And 2 out of 3 of the older test takers said they would prefer to study in the southern or western regions of the country, compared to only 44 percent of the traditionally aged college graduates. These responses suggest that older graduate students differ from younger graduate students in a number of ways, even though average verbal scores are very similar across age groups.

The next section examines data from the GRE Validity Study Service files concerning the relationship of GRE scores and undergraduate grades to first-year graduate school performance for persons of different ages.

## Relationship of Test Scores to First-Year Graduate Grade Averages

A search of the GRE Validity Study Service files located 170 departmental samples that included data on (a) GRE verbal and quantitative scores, (b) undergraduate grade-point averages, (c) first-year graduate grade averages, and (d) the ages of test takers at the time of first enrollment in the graduate program. Eight clusters of departmental samples were then defined according to similarity of fields; these clusters and the fields included in each of them are listed in Table 4. Frequency distributions of the ages of students at the time of enrollment in the programs in each cluster indicated that reasonable age groupings would be age 24 or younger (ranging from $25 \%$ in the medical biological sciences to $79 \%$ in the academic physical sciences), ages $25-29$ (ranging from $44 \%$ in the medical biological sciences to $18 \%$ in the academic physical sciences), ages $30-34$ (ranging from $18 \%$ in the professional physical sciences to $3 \%$ in the academic physical sciences), and age 35 or older (only sufficient for use in the humanities, academic social sciences, professional social sciences, and medical biological sciences, where the proportions of students age 35 or older ranged from $17 \%$ to $7 \%$ ). In addition, four individual disciplines were identified for analysis, each including from 8 percent to 19 percent of students age 35 or older at the time of first enrollment--English, psychology, education, and nursing.

The first step in the data analysis was to convert the test scores and grades within each departmental sample to standard scores with means of 50 and standard deviations of 10 .

[^1]Table 4
Graduate Department Groupings from
GRE Validity Study Service

|  | Cluster | GRE <br> Dept. Code | Department Name | Number of Departments |
| :---: | :---: | :---: | :---: | :---: |
| 1. | Humanities | 04 | Linguistics |  |
|  |  | 14 | Eng1ish | $16>_{2}$ |
|  |  | 20 | Philosophy |  |
|  |  | 86 | History | 7 |
| 2. | Academic <br> Social <br> Sciences | 81 | Anthropology | $2>$ |
|  |  | 92 | Political Science | $5<36$ |
|  |  | 93 | Psychology | 26 |
|  |  | 96 | Sociology | 3 - |
| 3. | Professional <br> Social <br> Sciences | 09 | Ed. Psychology |  |
|  |  | 85 | Education | 15 |
|  |  | 90 | Library Sciences | 7 |
|  |  | 94 | Public Administration | $5-33$ |
|  |  | 95 | Social Work | 2 |
|  |  | 99 | Guidance and Counseling | 3 |
| 4. | Academic Biological Sciences | 35 | Biology | 2 ) |
|  |  | 37 | Botany | 3 3 8 |
|  |  | 39 | Entomology |  |
|  |  | 52 | Zoology | 2 ) |
| 5. | Medical <br> Biological <br> Sciences | 43 | Nursing |  |
|  |  | 47 | Pharmacy | 1 - 9 |
|  |  | 48 | Physical Therapy | 1 J |
| 6. | Mathematical Sciences | 54 | Applied Math | 2 |
|  |  | 72 | Mathematics | 6 6 26 |
|  |  | 78 | Computer Science | $7{ }^{6} 2$ |
|  |  | 84 | Economics | 11 , |
| 7. | Academic Physical Sciences | 62 | Chemistry | 18 )24 |
|  |  | 76 | Physics | 6 - 24 |
| 8. | Professional Physical Sciences |  |  |  |
|  |  | 65 | Civil Engineering | $1$ |
|  |  | 66 | Electrical Engineering | 3 - 8 |
|  |  | 67 | Industrial Engineering | 1 |
|  |  | 69 | Other Engineering | 1 ) |
|  |  |  | TOTAL DEPTS. | 170 |

This standardization of data within departments allowed the data to be combined across all departments within each cluster even though individual departments had different standards of admission or of grading. The larger pool of data was then used to address the question of whether or not the predictors (test scores and undergraduate grades) and the criterion (first-year graduate school grades) were related in similar ways for the different age groups.

Consistent with the performance of GRE test takers reported earlier, the mean GRE verbal scores of the older students ( 30 and over) across all 170 departments were slightly higher than the verbal scores of the younger groups, while the mean quantitative scores averaged slightly lower for the older age groups. Undergraduate grade averages were lower in the older groups with a range of standard scores from 51.35 to 46.88 across age groups for all 170 departments. There were very slight differences in the first-year graduate school grade averages in the different age groups across all 170 departments, with the highest grades earned by those age 25-29 (standard score of 50.67) and the lowest grades by those age 24 or less (standard score of 49.57). The small differences in graduate grade averages in part reflect the very narrow range of graduate school grades for almost all enrollees. For example, the 143 departments in this study that reported first-year grades on a scale from 1.0 to 4.0 had a median grade average of 3.5 , and 141 of the 143 individual department averages were between 3.0 and 3.9. Though widely used because of convenience, grade averages with so little variation do not provide a very sensitive or reliable criterion for studies of the prediction of academic performance.

Table 5 presents findings for each of the four disciplines and eight field clusters: the number of departments included in each analysis, the total number of pooled first-year students in each group, the age groups with the number of students at each age level, and correlations of each of the predictors with first-year graduate school grades within each age group. Because they are based on a large number of cases, most of the correlations may be assumed to be reliably estimated. On the other hand, the relatively small number of cases for some of the older groups suggest that some of the correlations for these groups may be relatively unstable estimates. Also, the reader should note that there were not enough students age 35 or more to include this age group in the analyses for the field clusters academic biological science (4), mathematics (6), academic physical science (7), and professional physical science (8).

Table 5
Correlation of Individual and Combined Predictors with First-Year
Graduate Grade Average by Field and Age Group

| Field | No. of Depts. | $\begin{gathered} \text { Total } \\ \mathrm{N} \end{gathered}$ | Age Group | N | Correlations of FYA with: ${ }^{\text {a }}$ |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | UGPA | GRE-V | GRE-Q | V+Q | $\mathrm{U}+\mathrm{V}+\mathrm{Q}$ |
| English(also in cluster 1) | 16 | 449 | LE ${ }^{\text {b }} 24$ | 243 | 28 | 21 | 27 | 29 | 36 |
|  |  |  | 25-29 | 117 | 27 | 27 | 05 | 20 | 31 |
|  |  |  | 30-34 | 53 | 11 | 34 | 02 | 22 | 22 |
|  |  |  | GEC 35 | 56 | 22 | 43 | 16 | 34 | 41 |
| ```Psychology (also in cluster 2)``` | 26 | 990 | LE 24 | 451 | 23 | 20 | 21 | 23 | 31 |
|  |  |  | 25-29 | 290 | 29 | 20 | 20 | 24 | 34 |
|  |  |  | 30-34 | 146 | 22 | 13 | 16 | 17 | 26 |
|  |  |  | GE 35 | 103 | 09 | 19 | 12 | 19 | 20 |
| Education <br> (also in cluster 3) | 15 | 1106 | LE 24 | 352 | 32 | 31 | 28 | 33 | 41 |
|  |  |  | 25-29 | 352 | 27 | 15 | 18 | 20 | 28 |
|  |  |  | 30-34 | 228 | 18 | 16 | 01 | 10 | 19 |
|  |  |  | GE 35 | 174 | 09 | 33 | 20 | 30 | 28 |
| Nursing <br> (also in cluster 5) | 7 | 350 | LE 24 | 68 | 56 | 33 | 14 | 27 | 45 |
|  |  |  | 25-29 | 159 | 36 | 31 | 42 | 42 | 49 |
|  |  |  | 30-34 | 55 | 21 | 20 | 16 | 21 | 27 |
|  |  |  | GE 35 | 68 | 30 | 24 | 11 | 22 | 34 |
| Field Clusters ${ }^{\text {d }}$ |  |  |  |  |  |  |  |  |  |
| 1. Humanities | 26 | 721 | LE 24 | 396 | 33 | 27 | 26 | 32 | 39 |
|  |  |  | 25-29 | 193 | 28 | 22 | 12 | 21 | 32 |
|  |  |  | 30-34 | 79 | 15 | 28 | 05 | 20 | 23 |
|  |  |  | GE 35 | 53 | 24 | 35 | 21 | 34 | 39 |
| 2. Academic Social Science | 36 | 1265 | LE 24 | 602 | 23 | 23 | 22 | 26 | 33 |
|  |  |  | 25-29 | 361 | 29 | 23 | 21 | 26 | 35 |
|  |  |  | 30-34 | 181 | 23 | 22 | 20 | 24 | 31 |
|  |  |  | GE 35 | 121 | 07 | 21 | 10 | 18 | 19 |
| 3. Professional Social | 33 | 1882 | LE 24 | 716 | 33 | 34 | 27 | 35 | 43 |
| 3. Science |  |  | 25-29 | 584 | 28 | 19 | 21 | 23 | 32 |
|  |  |  | 30-34 | 317 | 21 | 21 | 06 | 16 | 25 |
|  |  |  | GE 35 | 265 | 08 | 30 | 17 | 27 | 26 |
| 4. Academic Biological | 8 | 219 | LE 24 | 139 | 27 | 16 | 20 | 24 | 33 |
| Science |  |  | 25-29 | 61 | 14 | 25 | 36 | 39 | 37 |
|  |  |  | GE 30 | 19 | 31 | 36 | 21 | 32 | 40 |
| 5. Medical Biological Science | 9 | 419 | LE 24 | 106 | 52 | 26 | 23 | 30 | 47 |
|  |  |  | 25-29 | 184 | 36 | 28 | 36 | 27 | 46 |
|  |  |  | 30-34 | 59 | 19 | 25 | 19 | 26 | 29 |
|  |  |  | GE 35 | 70 | 28 | 25 | 18 | 26 | 36 |
| 6. Mathematical Science | 26 | 695 | LE 24 | 454 | 28 | 12 | 24 | 23 | 32 |
| 6. Kathematical Science |  |  | 25-29 | 174 | 37 | 01 | 31 | 20 | 34 |
|  |  |  | GE 30 | 67 | 19 | 25 | 24 | 33 | 38 |
| 7. Academic Physical | 24 | 751 | LE 24 | 590 | 32 | 04 | 23 | 17 | 29 |
|  |  |  | 25-29 | 135 | 32 | 16 | 07 | 16 | 29 |
|  |  |  | GE 30 | 26 | -08 | -10 | 39 | 15 | 08 |
| 8. Professional PhysicalScience | 8 | 500 | LE 24 | 229 | 23 | 21 | 36 | 35 | 39 |
|  |  |  | 25-29 | 161 | 31 | 15 | 35 | 31 | 39 |
|  |  |  | GE 30 | 110 | 28 | 23 | 43 | 40 | 45 |
| Totals for all departments | 170 | 6452 | LE 24 | 3232 | 30 | 21 | 25 | 28 | 36 |
|  |  |  | 25-29 | 1853 | 30 | 18 | 23 | 25 | 35 |
|  |  |  | 30-34 | 805 | 21 | 22 | 15 | 22 | 29 |
|  |  |  | GE 35 | 562 | 13 | 27 | 18 | 26 | 28 |

[^2]$\mathrm{d}_{\text {See }}$ list of fields in each field cluster in Table 4.

Looking first at the correlations between each of the individual predictors and first-year graduate school grades, the data in Table 5 indicate that the relationship for each set of variables in every discipline or field cluster and every age group generally is positive. The correlations between first-year grades and both GRE verbal and quantitative scores average around .20 in all of the fields and age groups, with fluctuations that do not appear to show any consistent relationship to age. The correlations between undergraduate grades and first-year average do, however, show a consistent pattern in relation to age, with higher correlations for the younger age groups in almost every field. Whether because of grade inflation, recency of study, or other reasons, the data suggest that undergraduate grades are not as useful in predicting the graduate school performance of older applicants as in predicting the performance of younger students coming directly from undergraduate study. These results are consistent with earlier reserch on older college applicants (American College Testing Program, 1973.)

Regressions were computed to obtain the best linear combination of the verbal and quantitative scores and of test scores plus undergraduate grades for each of the four disciplines and eight field clusters in Table 5. For the two test scores as predictors, the median multiple R with first-year average was .28 with a range from .20 to .38 across the 12 groups. The best fitting combination of three predictors produced a median multiple R of .35 with a range from .31 to 43. These validity coefficients, based on group sizes ranging from 219 to 1,882 , probably are quite stable and are consistent with GRE validities reported by Wilson (1982) and Burton and Turner (1983). However, in estimating separate validity coefficients for the various age groups, the numbers are much smaller and the estimated beta weights correspondingly less stable. Therefore, the more stable but also more conservative method of giving each predictor an equal weight in combinations of two or three predictors was used for the data presented in the last two columns of Table 5. (See Wainer, 1976 and 1978, for a discussion of the relative merits of best fitting linear weights vs. unit weights in regression analyses.) In some cases, these equally weighted linear composites resulted in a correlation with the criterion that is slightly lower than the highest zero-order predictor-criterion correlation that is reported in the first three columns of correlations in Table 5. Since the largest zero-order predictor-criterion correlation should set the lower limit for the optimal combination of predictor variables, these results suggest that the individual predictors may be more useful than combinations of predictors in making admission decisions for graduate students of various ages.


#### Abstract

The predictor-criterion relationships for each age group across the eight field clusters in Table 5 are presented graphically in Figure 6. The relationship between verbal scores and first-year average (upper left of Figure 6) is about the same in each age group, especially in the humanities and the social sciences; almost all of the correlations that are below . 20 are in the physical sciences. Similarly, the relationship between quantitative scores and first-year average (upper right) is about the same for each age group, particularly when one notes that there are no groups age 35 or more in four science fields that attach particular importance to quantitative scores and that all of the correlations above . 30 are in science departments.


As noted earlier, there is a declining relationship between undergraduate grades and first-year average across age groups (lower left of Figure 6). Finally, in the lower right, the equal combination of three variables to predict first-year average works slightly less well for the older two age groups relative to the younger two age groups, probably because of the declining utility of undergraduate grades. Basically, however, the diagrams support the general conclusion that there are no sizable differences in the coefficients of predictive validity for the GRE General Test scores of persons who begin graduate study at various ages.

An additional question might be asked about GRE test scores and undergraduate grades in relation to first-year graduate grade averages. Though the level of predictability is about the same for the different age groups, are the predicted first-year grade averages equally accurate, or are the grades of some age groups more or less likely to be overpredicted or underpredicted? Given the similarity of the validity coefficients and the restricted range of the first-year grades as the criterion, it did not seem likely that significant differences would be found. However, an exploratory analysis was carried out using the 1,106 first-year graduate students in education. In this analysis the first-year graduate grade average was predicted from the verbal and quantitative scores and undergraduate grades with beta weights and with unit weights. The regression equation for the total group was then applied separately to each of the four age groups, and the standardized predicted grade averages were compared to the standardized earned grade averages. The results of the analysis are presented in Table 6. The obtained first-year grades of the older students were underpredicted slightly, due largely to the fact that their undergraduate grades were lower but their first-year graduate school grades were slightly higher than the same measures for the younger groups. Based on the mean levels of the various
-26-
Figure 6
Summary of Correlations of Predictors with First-Year Graduate School Grades in Eight Academic Clusters of Departments, by Student Age at Entrance
Age Groups

|  |  24 $25-29$ $30-34$ | $\geq 35$ |
| :--- | :--- | :--- | :--- |

$$
\begin{array}{|l|l|l|l}
0 & 0 & 0 \\
00 & 00 & 000 & 0 \\
00 & 000 & 0
\end{array}
$$

Undergraduate GPA with FYA

| Age Groups |  |  |  |
| :--- | :--- | :--- | :--- |
| $\leq 24$ | $25-29$ | $30-34$ | $\geq 35$ |



$$
\begin{array}{r}
.50-.54 \\
.45-.49 \\
.40-.44 \\
.35-.39 \\
.30-.34 \\
.25-.29 \\
.20-.24 \\
.15-.19 \\
.10-.14 \\
.05-.09 \\
.00-.04 \\
-.05-.01
\end{array}
$$

Correlations
. 45 - . 49
$.40-.44$
.35 - . 39
$.30-.34$
.25 - . 29
. 20 - . 24
. 15 - . 19
.10 - . 14
.05 - . 09
$.00-.04$
-. 05 - . 01
-. 10 - . 06

GRE-Q with FYA

| Age Groups |  |  |  |
| :---: | :---: | :---: | :---: |
| $\leq 24$ | $25-29$ | $30-34$ | $\geq 35$ |


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| 0 | 0 |
| 0 |  |

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Table 6

Predicted vs. Observed First-Year Graduate Grade Averages
by Age Groups in 15 Departments of Education ( $\mathrm{N}=1,106$ )

| Age Groups | N | Correlation of predicted FYA using beta weights and unit weights | $\begin{gathered} \text { FYA (in } \\ \text { standard } \\ \text { score units) } \end{gathered}$ | $(+) \quad(-)$ Over- or under-prediction (in S.D. units) beta unit weights weights |
| :---: | :---: | :---: | :---: | :---: |
| $\leq 24$ | 352 | . 98 | 48.92 | +. 18 +.18 |
| 25-29 | 352 | . 97 | 50.36 | +. $07+.08$ |
| 30-34 | 228 | . 96 | 50.68 | -. 25 -. 22 |
| $\geq 35$ | 174 | . 98 | 50.63 | -. 15 -. 21 |

variables, it seems likely that frequently the graduate school performance of older applicants is slightly underpredicted from a combination of test scores and undergraduate grades, but these results for 15 education departments do not suggest that the variation across age groups is very great. Predicted and observed grades were not compared for other disciplines or field clusters in this study.

## Summary and Conclusions

Having examined the graduate study plans and test scores of about 200,000 GRE test takers in each of two years, 1975-76 and 1980-81, what conclusions can we draw that are relevant to the graduate admission of older and returning students? The following points summarize the results of the study:

1. The number of GRE test takers age 30 or older has increased (from 15 percent of the total in 1975-76 to 21 percent in 1980-81), accounting for more than 40,000 of the test takers in 1980-81. Though GRE test takers represent only some of the students applying for graduate admission in any given year, the increasing number of older test takers undoubtedly parallels an increasing number of older applicants to graduate education. Questions concerning the admission of older students, and attention to the needs of these students, face almost every graduate school in the nation.
2. Almost 2 out of 3 GRE test takers age 30 or older expect to pursue graduate study in education or another of the social and behavioral sciences; these fields attract about 1 out of 3 graduates age 22 or less. The pattern is reversed in the sciences, with twice the proportion of younger test takers indicating interest in these fields. The overall pattern of graduate study plans appears to be fairly stable; the two years 1975-76 and 1980-81 are very similar in the distribution of fields by age groups. The schools or departments that must deal with the largest number of applicants over 30 years of age include education, psychology, nursing, business, social work, computer science, library science, English, and religious studies.
3. The average GRE verbal score of test takers age 30 or older is about the same as the average verbal score of 20-22 year olds planning graduate study in the same
field, and the verbal score appears to predict firstyear graduate school grades with approximately equal accuracy for both age groups. There is no support for the notion that verbal scores should be interpreted differently when making admission decisions for older applicants. Within a given field of study, GRE verbal scores appear to be similarly useful for applicants regardless of age.
4. The average quantitative score is lower for test takers age 30 or older than for those age $20-22$ in almost every field, probably due to a lack of continuing practice in quantitative skills for most American adults. However, an examination of predictive validity indicates that the relationship between quantitative scores and first-year graduate school grades is similar across age groups, especially in the scientific and mathematical fields that are most concerned with the assessment of quantitative ability. These results suggest that the quantitative measure continues to be appropriate for use with older applicants if it is directly relevant to the program of study that will be undertaken and if the applicants have had a reasonable opportunity to maintain quantitative skills in the period of time since previous study.
5. The average self-reported undergraduate grades of graduate applicants age 30 or more are lower than the average undergraduate grades reported by more recent graduates, and there is less relationship between undergraduate and graduate school grades for older than for younger applicants. These results suggest that test scores may be increasingly useful in predicting the graduate school performance of older applicants as the time interval between undergraduate and graduate study increases and the usefulness of the earlier performance record declines. It should be noted, however, that more recent performance records, such as grades in graduate study already completed, were not examined in this study; almost certainly, recent graduate school grades would demonstrate a closer relationship to future performance than do either test scores or undergraduate grades.
6. In general, older students defined by years since the baccalaureate, who completed undergraduate degrees in their early 20 s and are now contemplating return to graduate study, average higher verbal and quantitative scores than do those of similar ages who delayed or
interrupted their undergraduate studies. It is not safe to assume that a candidate will do poorly on the GRE General Test simply because she or he has been away from formal academic study for a number of years.
7. The grades earned by graduate students are predicted only partially by the traditional admission criteria of test scores and undergraduate grades, regardless of the ages of the graduate students. Other characteristics and experiences of applicants should be considered when making all admissions decisions; it is especially important to consider factors in addition to test scores and undergraduate grades when deciding upon the admission of an older applicant who is returning to graduate study after several years away from academe.

The studies in both 1975-76 and 1980-81 indicate a great deal of self-selection among the men and women who choose to undertake graduate study in their 30 s or 40 s or beyond as well as among those who return after many years away from the activities and pressures of academic study. Many are in occupations that place a high premium on higher education, such as teaching, professional fields, and administrative management. For the most part, they have more flexibility in making the decision of whether or not to continue studying than do young people without work experience, and they are less likely to continue in academe unless they find the experience enjoyable and rewarding. Also, they have more maturity and experience to apply in selecting a graduate program that is appropriate to their needs and abilities, including the selection of a program that will make academic demands consistent with their readiness and motivation to perform.

Sometimes both candidates and graduate programs wonder whether it is appropriate to ask prospective returning students to take the GRE General Test when several years have elapsed since the candidates completed their undergraduate degrees. Recent comments about the GRE test-taking process that were obtained from more than 140 men and women who were repeating the test after the passage of nine years or more help shed some light on this question. Consistent with the data in this report on obtained verbal and quantitative scores for persons of various ages, most of these older test repeaters expected that their new verbal scores would remain about the
${ }^{3}$ From a study in progress on factors related to score changes among GRE test repeaters (M. J. Clark \& D. Powers) funded by the ETS Program Research Planning Council.
same or be higher and that their new quantitative scores would be somewhat lower. The following sample of comments on possible reasons for any differences between the earlier and new scores suggest that the older test takers are quite realistic about the process:
-- Ten more years have elapsed since I last took any algebra or geometry classes and those skills have deteriorated.
-- Examinees are bound to do better when taking the test while still involved in undergraduate or graduate work rather than 15 years later, particularly in applications like math that are not used on the job.
-- I expect to do better because of employment and graduate study experiences.
-- Maturity and advanced education should account for an increase in scores.
-- I'm 12 years older, and now I really want to go to graduate school.
-- It is more important to get higher scores this time so I studied more.
-- The ability to take tests diminishes significantly with the passage of time. Therefore, test scores are likely to go down after several years away from the "test-taking game" unless one practices. I did not have enough time to practice.
-- I think that my verbal scores will be higher because of my teaching and graduate work, but my quantitative scores will probably be lower since I have had no math course since 1967 and since I do not routinely use math in my work.
-- I knew more on this test than I did as an undergraduate, yet I felt I worked slower and comprehended slower.

- I might do better due to my graduate work and years of employment plus a great deal of maturity in those 10 years.

Almost all of these GRE test repeaters were taking the test again because a graduate school requested more recent scores, and preliminary analyses suggest that their expectations about
a score increase or decrease was the best predictor of an actual increase or decrease in their scores. These self-reports of older test takers are quite consistent with the reported GRE test scores by age groups in the earlier sections of this report as well as with the self-selected nature of older applicants to graduate study.

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## Appendix A

## Eackground Information Questions

Your answers to these questions will be used for research and, if You are taking the CRE, in group statistics describing CRE student populations. In both of these uses, individual responses will not be communicated to any institution. In addition, your responses will not atfect your scores in any way. H you are registering for the Minority Craduate Student Locater Service, your individual responses to questions in the shaded areas below may be reported to one or more institutions.
If you are completing the registration form to sign up for the tests only, we encourage you to answer all questions, particulary questions $A$ through $N$ and $U$ through $X$. You may, however, omit any you do not wish to answer.) If you are registering for the lo cater Service, however, it is essential that you answer all questions in the shaded areas, since the tocater Service will not be able to serve you unless in has all the information provided by your answers to those questions.

* A Have you previously taken one or more CRE tests?
(1) No
(2) Yes-took the test(s) on or prior to September 30, 1979
(3) Yes-took the test(s) more recently than September 30 1979

H you are registering for the Locater Service, be sure to answer at least the questions in shaded areas. H you are not registering for the locater Service, and your answer to question $A$ is (3), and your responses to the rest of the questions would be the same as they were before, you need not answer the questions again. If your re sponses to any of the rest of the questions would be different, please respond again to all of them.

## 8. Are you a citizen of the United Suates?

(1) Ves
(2) $\mathrm{No}_{0}$

Omit questions $C$ and D if you are not a United States citizen
C. In the State Code List on page 44 find the code number for the stare you consider your permanent residence. Blacken the spaces for that state's code number.
D. How do you describe yourself?
(1) American Indian, Eskimo, or Aleur
(2) Black or Afro-American or Negro
(3) Mexican American or Chicano
(4) Oriental or Asian American
(5) Puerto Rican
(6) Other Mispanic or Latin American
(7) White
(B) Other

Do you communicate better in English than in any other languaged
(1) Yes (2) No
F. What is your best estimate of the total student enroliment at the school from which you received or will receive your bachelor's degree?
(1) Fewer than 1,000
(2) $1,000-4,999$
(3) $5,000-9,999$
(4) $10,000-19,999$
(5) $20,00 \mathrm{C}$ or more
C. Which of the following best describes your undergraduate institution?
(1) Public
(2) Private-no church affiliation
(3) Private-church affilation
H. In what calendar year did you receive or do you expect to receive your bachelors degree:
(Please blacken the spaces on your registration form corresponding to the last two digits of the year.)
L. Referring to the Major Field Code List on page 44, find your undergraduate major field of study. Blacken the spaces for that field's code number.

* 1. What is your eventual graduate degree objective'
(1) Nondegree study
(2) Master's (M.A. M.S., M.Ed., etc.)
(3) Intermediate (such as Specialist)
(4) Doctorate (Ph.D., Ed.D., etc.)
(5) Postooctoral study
* K. Referring to the Major field Code List on page 44, find the field in which you pian to do your graduate work. Blacken the spaces for that field's code number. If you are undecided, use the following code:


## $\infty$ Undecided

L. Hyou have a second choice of graduate major field, enter its twodigit code number in the approprate spaces, following the instructions for question K. If you have no second choice, leave this question blank.

* $M$. Which of the following best describes the graduate institution you most recently attended or currently artend on at least a half-time basis?
(1) I have never attended graduate school or have attended graduate school on less than a half-ume basis only.
(2) Public
(3) Private-no church affiliation
(4) Private-church affilation
* N. In what calendar year did you last attend graduate school on at least a haliferm basis?
Blacken the spaces on your registration form corresponding to the last two digits of the year, if you have not attended graduate school, use the following code:
0 Thave never artended graduate school or have attended on less than a half-time basis only.
O. In courses in your undergraduate major field only, what grade average have you received so far? (If your college does not use letter grades, please mark the letter grade that is the closest equivalent to your grade average.)
(1) D or lower
(2) C-
(3) C
(4) B-
(5) $B$
$A$ (
$A$
P. Considering only your last two college years, approximately what overall grade average have you received? (If your college does not use letter grades, please mark the letter grade that is the closest equivalent to your grade average.)
(1) Dor lower
(5) 8
(3) C
(4) B-
Q. is there any one geographic region in which you would prefer to attend graduate school? (Select one only.)
(1) New England (Connecticut, Maine, Massachusetts, New Hampshire, Rhode island, Vermont)
(2) Mid-Atlantic (Delaware, District of Columbia, Mary land, New Jersey, New York, Pennsylvania)
(3) South (Alabama, Arkansas, Florida, Ceorgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia)
(4) Midwest (Illinois, Indiana, lowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin)
(5) Southwest (Arizona, California, Nevada, New Mexico, Oklahoma, Texas)
(6) West (Alaska, Colorado, Hawaii, Idaho, Montana, Oregon, Utah, Washington, Wyoming)
(7) Any region would be accentable
R. About how many hours per week did you spend working for wages during your most recent school year?
(7) 0
(4) $11.20^{\text {(2) }} 1.5$
(3) 6-10
$\begin{array}{ll}\text { (4) } 11.20 & \text { (5) More than } 20\end{array}$
S. Atrout how many hours per week did you spend in community service activities during your most recent achool year?
(1) 0
5 (3)

3) $6-10$
(4) 11.20
(5) More than 20
1. In which one of the following achievemencs have vou erceived your most important honor, award, prize, or ether recognition' (select one only.)
(1) Siudent government or orgenization
(2) Prolestionst-an award or prize for freldwork or publication of a scholarly aricle or book
(3) Community senice-election or appoimment to a community service unit, ectivity, or group
(4) Likerary-editing the college paper, yearbook, or liaerary magazine or havine \& poem, wory, or articte published in a puthic paper or cragazine
(5) Aristic-a high rating in a music condest a part in a play, opera, or show, or an award in an an compe rition
(6) Scientific-an award or recognition in a science competition
(7) Ashletic-a letter in athietics
(8) None of the above categories
U. What was the thighest level of education attained by your Gather?
(1) Did not graduate from high school
(2) High school graduate
(3) Beyond high school but did not graduate from a four-year college
(4) Craduate of a fouryear college
(5) Beyond college but did not receive a graduate or professional degree
(6) Craduate or prolessional degree

* V. What was the highest level of education attained by your mother!
(1) Did not graduate from tigh school
(2) Migh school graduate
(3) Beyond high school but did nor graduate from a four-year coliege
(4) Craduate of a four-year college
(5) Beyond college but did not receive a graduate or professional degree
(6) Craduate or professional degree
* W. What was the approximate average annual income of your family during the time when you were in high school?
(1) Less than 56,500
(2) $86,50010 \$ 15,000$
(3) $\$ 15,000$ to $\$ 25,000$
(4) More than $\$ 25,000$
* X. Which of the following best descriles the iocation of the high school you attended?
(1) large city
(2) Suburb of a large city; mesiopolitan area
(3) Other ciny or town
(4) Farming community or other rural area


## State Code List

| $0124500=$ | 0) Delamar | 14 Muners | 21 Mayune | 28 Wetrasta | 3 Nomm Caroins | 40 Whoce istanc | $4{ }^{45}$ Virginat |
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| 05 arzer. ${ }^{\text {a }}$ | Columbes | 16 lowa | 23 Michigan | 30 Mew | 35 Onvo | 42 Sount Dakol | 48 Wasningior |
| O A Mranses | 10 Fierice | 17 Lonas | 24 Minnesote | Mampstime | 37 Oklahems | 43 Tennescer | 48 West Viruma |
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| 6 Conornoo | 12 Hewrel | 19 Loursant | 26 Miscouri | 32 New Mexico | 3: Pennsptrana | 45 Uner | 51 Wyoming |
| 07 Connetrear | 13 nix | 20 Mant | 27 Montian | 33 Now York | 54 Anerto Preo | 45 Verreat |  |

Department Code Lisf (for Ifem 13)—Malor Field Code List (for Questions I and K)

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21. Comosrative Lmmentury
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    Lmerature
15 Fine Arts. Ar. Design
16 French
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ON Imgurstics
19 Musc
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    Lseralurs
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21 Nelgrous Sluoits er Reveren
21 Religous Slubits er Revegen
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25 Spangen
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| 10 Other Foreign Langurges <br> * Oiner Rumanties |  |
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| SOCIAL SCEMCET |  |
| 27 Atrican Sluces |  |
| B1 Anthropelogy |  |
| 82 Lusiness and Commeres |  |
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| 4 Economics |  |
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| 09 Efucalamo Paychorey |  |
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| 55 | Slave Studies |
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| 0 | Sociology |
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|  | OLOGICAL SEIENES |
| 31 | Agnculure |
| 32 | Avilomy |
| 85 | Audiology |
| 33 | ectenology |
| 9 | Lochemstiy |
| 83 | Sology |
| 26 | 800nysics |
| 87 | Copany |
| 3 | Dentistry |
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| 25 | Hospra' anc hestot Sermces admunstration |
| 42 | Mecicine |
| 07 | Mcrobiolagy |
| 43 | Mutsing |
| 77 | Mutricon |
| 4 | Occupalionsl Theragy |
| 45 | Optometry |
| 46 | Ostcopathy |
| 0 | Parastolagy |
| 58 | Pathology |
| 03 | Masmacology |
| 47 | Ampracy |
| 48 | Physical Therapy |
| 49 | Physiology |
| 50 | Nubix Mealth |
| 51 | Veterinary Meorine |
| 52 | 200\%ogy |
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PWYSICAL SCIEMCES
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6t Engineering Evecical
66 Engineering Electical
68 Engineeting Mecnameal
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73 Mena!lurgy
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75 Oceanography
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GRE Registration Questions:
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| C. DATE OF BIRTH |  |  |
| :---: | :---: | :---: |
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| OMar. | (0) 0 | (0) |
| Oapr | (1) (1) | (1) (1) |
| Omay | (3) (2) | (2) (2: |
| OJune | (3) (3) | (3) ${ }^{(3)}$ |
| OJulv | - | (6) (6) |
| OAug | (3) | (3) ${ }^{5}$ |
| Osepr. | ${ }^{6}$ | (6) 6 |
| Ooa | (8) | (r) |
| Onor. | (8) | (8) |
| Odor. | (6) | (6) |

* 7. SEX

| 7. SEX |
| :---: | :---: |
| .0 Male $\quad 20$ Female |

Appendix B
Groups of Disciplines Used in "Major Area" Tables

## Humanities:

| Arts=Dramatic Art | Other Humanities=Archaeology | Architecture |
| :---: | :---: | :--- |
| Music | Art History | Classical Lang. |
| Fine Arts | Comparative Lit. | English |
|  | Far Eastern Lang. | French |
|  | German | Italian |
|  | Iinguistics | Near Eastern Lang. |
|  |  | Philosophy |
|  | Russian | Religion |
|  | Speech | Spanish |
|  |  | Other Humanities Foreign Lang. |
|  |  |  |



## Biological Sciences:

|  | Anatomy <br> Audiology <br> Bacteriology <br> Dentistry <br> Health Admin. <br> Medicine <br> Nursing <br> Nutrition <br> Occupational Therapy | Optometry <br> Osteopathy <br> Parasitology <br> Pathology <br> Pharmacology <br> Pharmacy <br> Physical Therapy <br> Publif Health |
| :---: | :---: | :---: |
| Other Applied Biological | Sciences=Agriculture Entomology Forestry Home Economi Veterinary |  |

## Physical Sciences:

Engineering=Aeronautical Eng.
Chemical Eng.
Civil Eng.
Electrical Eng.
Industrial Eng.
Mechanical Eng.
Other Eng.
Metallurgy
Mining
Math. Science=Applied Mathematics
Computer Science
Mathematics
Statistics
Physical Science=Astronomy
Chemistry
Physics
Geology
Oceanography
Other Physical Sciences

Appendix C

The following tables are included as supplemental information:

Table 2 -- Rank Order of Intended Graduate Major for Candidates Age 22 or Less

Table 3 -- Rank Order of Intended Graduate Major Candidates Age 23-29

Table 4 -- Rank Order of Intended Graduate Major for Candidates Age 30-39

Table 5 -- Rank Order of Intended Graduate Major for Candidates Age 40 or More

Table 6 -- Rank Order of Intended Graduate Major for Males
Table 7 -- Rank Order of Intended Graduate Major for Females
Table 8 -- Rank Order of Intended Graduate Major for Candidates Who Received Bachelor's Degree 1972-1966

Table 9 -- Rank Order of Intended Graduate Major for Candidates Who Received Bachelor's Degree 1965 or Earlier

Table 10 -- Rank Order of Intended Graduate Major for Males Age 22 or Less

Table 11 -- Rank Order of Intended Graduate Major for Females Age 22 or Less

Table 12 -- Rank Order of Intended Graduate Major for Males Age 23-29
Table 13 -- Rank Order of Intended Graduate Major for Females Age 23-29
Table 14 -- Rank Order of Intended Graduate Major for Males Age 30-39
Table 15 -- Rank Order of Intended Graduate Major for Females Age 30-39
Table 16 -- Rank Order of Intended Graduate Major for Males Age 40 or More
Table 17 -- Rank Order of Intended Graduate Major for Females Age 40 or More

Table 18 -- Rank Order of Intended Graduate Major for Males Who Received Bachelor's Degree 1972-1966

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Appendix C (cont.)
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The following tables are included as supplemental information:

Table 19 -- Rank Order of Intended Graduate Major for Females Who Received Bachelor's Degree, 1972-1966

Table 20 -- Rank Order of Intended Graduate Major for Males Who Received Bachelor's Degree 1965 or Earlier

Table 21 -- Rank Order of Intended Graduate Major for Females Who Received Bachelor's Degree 1965 or Earlier

Table 22 -- Rank Order of Intended Graduate Major for Total Sample

TABLE 2. RANK ORDER OF INTENDED GRADUATE MAJOR FOR CANDIDATES AGE 22 OR LESS


* BASED ON ALL GRE RESPONDENTS OCTOBER, 1980 - JUNE, 198I, WHO COMPLETED GRE AND BACKGROUND QUESTIONNAIRE

TABLE 3. RANK ORDER OF INTENDED GRADUATE MAJOR FOR CANDIDATES AGE $23-29$


* BASED ON ALL GRE RESPONDENTS OCTOBER, 1980 - JUNE, 1981, WHO COMPLETED GRE AND BACKGROUND QUESTIONNAIRE

TABLE 4. RANK ORDER OF INTENDED GRADUATE MAJOR FOR CANDIDATES AGE 30 - 39


* BASED ON ALL GRE RESPONDENTS OCTOBER, 1980 - JUNE, 1981, WHO COMPLETED GRE AND BACKGROUND QUESTIONNAIRE

TABLE 5. RANK ORDER OF INTENDED GRADUATE MAJOR FOR CANDIDATES AGE 40 OR MORE

|  |  | N | $\%$ |  | $\begin{array}{r} \text { MEAN } \\ \text { GRE-V } \end{array}$ |  | MEAN GRE-Q |  |  |  |  | N | $\%$ | $\begin{array}{r} \text { MEAN } \\ \text { GRE-V } \end{array}$ | $\begin{array}{r} \text { MEAN } \\ -\quad \begin{array}{l} \text { GRE-Q } \end{array} \\ \hline 11 \end{array}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 11 | 1 |  |  | 1 |  |  |  | 11 | 11 |  |  |  |  |  |  |  |
| \\| EDUCATION | 1 | 2184 | 22.66 | 1 | 466 |  | 409 | 11 | 11 | COMPARE LIT |  | 16 | 0.17 | 592 | 427 | 11 |
| I\| educ admin | 1 | 781 | 8.10 | 1 | 448 |  | 411 | 11 | 11 | FHYSICS |  | 14 | 0.15 | 516 | 677 | 11 |
| I\| PSYCHOLOGY | 1 | 605 | 6.28 | 1 | 526 |  | 443 | 11 | 11 | AUDIOLOGY |  | 14 | 0.15 | 452 | 438 | 11 |
| \|| NURSING | 1 | 574 | 5.95 | 1 | 484 |  | 410 | 11 | 11 | BIOCHEMISTRY |  | 14 | 0.15 | 446 | 521 | 11 |
| \|| guIdance/COUNS | 1 | 485 | 5.03 | 1 | 474 |  | 399 | 11 | 11 | OCCUP THERAPY |  | 13 | 0.13 | 534 | 450 | 11 |
| \|| LIERARY SCI | 1 | 339 | 3.52 | 1 | 522 |  | 418 | 11 | 11 | VET MEDICINE |  | 13 | 0.13 | 402 | 465 | 11 |
| \|| FUBLIC ADMIN | I | 280 | 2.90 | 1 | 480 |  | 432 | 11 | 11 | SOCIAL PSYCH |  | 13 | 0.13 | 451 | 377 | 11 |
| \|| ENGLISH | 1 | 258 | 2.68 | 1 | 554 |  | 414 | 11 | 11 | ARCHAEOLOGY |  | 13 | 0.13 | 554 | 468 | 11 |
| II SOCIAL WORK | 1 | 229 | 2.38 | 1 | 501 |  | 397 | 11 | 11 | ARCHITECTURE |  | 13 | 0.13 | 500 | 508 | 11 |
| \|| BUSINESS/CMRCE | 1 | 221 | 2.29 | 1 | 482 |  | 502 | 11 | 11 | FHYSIOLOGY |  | 12 | 0.12 | 449 | 433 | 11 |
| \|| RELIGIOUS STD | 1 | 191 | 1.98 | 1 | 517 |  | 453 | 11 | 11 | FRENCH |  | 12 | 0.12 | 516 | 478 | 11 |
| \\| OTHER SOC SCI | 1 | 163 | 1.69 | 1 | 493 |  | 444 | 11 | 11 | MECHANICAL ENG |  | 11 | 0.11 | 430 | 580 | 11 |
| \|| HISTORY | 1 | 163 | 1.69 | 1 | 558 |  | 423 | 11 | 11 | Pharmacology |  | 10 | 0.10 | 573 | 551 | 11 |
| 11 EDUC FSYCH | 1 | 139 | 1.44 | 1 | 507 |  | 429 | 11 | 11 | BOTANY |  | 10 | 0.10 | 607 | 581 | 11 |
| \|| PUBLIC HEALTH | 1 | 135 | 1.40 | 1 | 499 |  | 441 | 11 | 11 | AIIER STUDIES |  | 10 | 0.10 | 528 | 369 | 11 |
| I\| COMPUTER SCI | 1 | 126 | 1.31 | 1 | 510 |  | 593 | 11 | 11 | NEAR EAST LANG |  | 9 | 0.09 | 484 | 429 | 11 |
| \|| HOSPITAL ADMIN | 1 | 97 | 1.01 | 1 | 457 |  | 402 | 11 | 11 | STATISTICS |  | 9 | 0.09 | 534 | 617 | 11 |
| I\| SOCIOLOGY | 1 | 97 | 1.01 | 1 | 497 |  | 424 | 11 | 11 | GERMAN |  | 9 | 0.09 | 540 | 422 | 11 |
| \|| MUSIC | 1 | 95 | 0.99 | 1 | 483 |  | 424 | 11 | 11 | MEDICINE |  | 8 | 0.08 | 515 | 540 | 11 |
| $1 \mid$ FINE ARTS | 1 | 88 | 0.91 | 1 | 486 |  | 400 | 11 | 11 | FORESTRY |  | 8 | 0.08 | 553 | 524 | 11 |
| \|| POLITICAL SCI | 1 | 83 | 0.86 | 1 | 485 |  | 445 | 11 | 11 | ITALIAN |  | 7 | 0.07 | 507 | 411 | 11 |
| \| $\mid$ COMMUNICATIONS | 1 | 78 | 0.81 | 1 | 507 |  | 427 | 11 | 11 | DENTISTRY |  | 6 | 0.06 | 378 | 440 | 11 |
| I\| ANTHROPOLOGY | 1 | 65 | 0.67 | 1 | 580 |  | 444 | 11 | 11 | ENTOMOLOGY |  | 6 | 0.06 | 470 | 443 | 11 |
| \\| ECONOMICS | 1 | 60 | 0.62 | 1 | 473 |  | 531 | 11 | 11 | PATHOLOGY | 1 | 6 | 0.06 | 428 | 470 | 11 |
| 11 HOME ECONOMICS | 1 | 57 | 0.59 | 1 | 463 |  | 407 | 11 | 11 | ZOOLOGY |  | 6 | 0.06 | 592 | 550 | 11 |
| \\| 1 SPEECH | 1 | 47 | 0.49 | 1 | 504 |  | 395 | 11 | 11 | FHARMACY |  | 6 | 0.06 | 352 | 493 | 11 |
| [\| URBAN DEVELOP | 1 | 47 | 0.49 | - | 528 |  | 445 | 11 | 11 | CHEMICAL ENG | 1 | 4 | 0.04 | 440 | 680 | 11 |
| 11 PHYSICAL ED | 1 | 46 | 0.48 | , | 424 |  | 396 | 11 | 11 | OTHER FOR LANG |  | 4 | 0.04 | 488 | 388 | 11 |
| $\\|$ ELECTRICAL ENG | 1 | 45 | 0.47 | 1 | 456 |  | 595 | 11 | 11 | OCEANOGRAPHY | 1 | 4 | 0.04 | 513 | 483 | 11 |
| $\\|$ Industrial rel | 1 | 43 | 0.45 | , | 488 |  | 465 | 11 | 11 | FAR EAST LANG |  | 4 | 0.04 | 405 | 468 | 11 |
| \|| JOURNALISM | 1 | 42 | 0.44 | 1 | 566 |  | 446 | 11 | 11 | GENETICS |  | 4 | 0.04 | 650 | 560 | 11 |
| I\| SPANISH | 1 | 42 | 0.44 | 1 | 430 |  | 356 | 11 | 11 | BACTERIOLOGY | 1 | 3 | 0.03 | 507 | 460 | 11 |
| \|| ART HISTORY | 1 | 40 | 0.41 | 1 | 542 |  | 394 | 11 | 11 | OPTOMETRY | 1 | 3 | 0.03 | 553 | 507 | 11 |
| \|| BIOLOGY | 1 | 39 | 0.40 | 1 | 498 |  | 483 | 11 | 11 | APPLIED MATH | 1 | 3 | 0.03 | 557 | 763 | 11 |
| \|| OTH HUMANITIES | 1 | 38 | 0.39 | 1 | 540 |  | 420 | 11 | 11 | CLASSICAL LANG |  | 3 | 0.03 | 543 | 380 | 11 |
| \\| I INTERNAT REL | 1 | 33 | 0.34 | 1 | 538 |  | 464 | 11 | 11 | RUSSIAN | 1 | 2 | 0.02 | 715 | 545 | 11 |
| \|| LINGUISTICS | 1 | 32 | 0.33 | 1 | 498 |  | 464 | 11 | 11 | ASTRONOMY | 1 | 2 | 0.02 | 385 | 400 | 11 |
| \|| DRAMATIC ARTS | 1 | 31 | 0.32 | 1 | 522 |  | 425 | 11 | 11 | PARASITOLOGY | 1 | 2 | 0.02 | 465 | 635 | 11 |
| $1]$ NUTRITION | 1 | 31 | 0.32 | 1 | 484 |  | 432 | 11 | 11 | metallurgy | , | 2 | 0.02 | 280 | 505 | 11 |
| $1 \mid$ OTHER BIOL SCI | 1 | 31 | 0.32 | 1 | 489 |  | 470 | 11 | 11 | ANATOMY | I | 2 | 0.02 | 635 | 585 | 11 |
| \|| AGRICULTURE | 1 | 31 | 0.32 | 1 | 430 |  | 451 | 11 | 11 | BIOPHYSICS | 1 | 2 | 0.02 | 505 | 520 | 11 |
| \|| OTHER ENGIN | 1 | 28 | 0.29 | 1 | 489 |  | 607 | 11 | 11 | AERONAUT ENG | 1 | 1 | 0.01 | 600 | 760 | 11 |
| \|| GEOLOGY | 1 | 26 | 0.27 | 1 | 540 |  | 549 | 11 | 11 | PHYS THERAPY | , | 1 | 0.01 | 480 | 390 | 11 |
| 11 MATHEMATICS | 1 | 26 | 0.27 | 1 | 511 |  | 668 | 11 | 11 | MINING | 1 | 1 | 0.01 | 300 | 340 | 11 |
| $\\|$ OTHER PHYS SCI | 1 | 24 | 0.25 | 1 | 490 |  | 570 | 11 | 11 | SLAVIC STUDIES | 1 | 0 | 0.0 | 0 | 0 | 11 |
| 11 LAW | 1 | 23 | 0.24 | 1 | 445 |  | 377 | 11 | 11 | OSTEOPATHY | 1 | 0 | 0.0 | 0 | 0 | 11 |
| 11 PHILOSOPHY | 1 | 23 | 0.24 | 1 | 579 |  | 489 | 11 | 11 |  | 1 |  | 1 |  |  | 11 |
| I\\| CHEMISTRY | 1 | 21 | 0.22 | 1 | 428 |  | 578 | 11 | 11 |  | 1 |  | 1 |  |  | 11 |
| \|| MICROBIOLOGY | 1 | 20 | 0.21 | 1 | 516 |  | 500 | 11 | 11 | NOT IN ABOVE | 1 | 315 | 3.271 | 464 | 422 | 11 |
| \\| CIVIL ENG | 1 | 20 | 0.21 | 1 | 437 |  | 588 | 11 | 11 | UNDECIDED | 1 | 549 | 5.70 | 471 | 420 | 11 |
| \\| INDUSTRIAL ENG | 1 | 19 | 0.20 | 1 | 448 |  | 576 | 11 | 11 | TOTAL | 1 | 9639 | 100.00 \| | 486 | 430 | 11 |
| I\| GEOGRAPHY | 1 | 19 | 0.20 | 1 | 529 |  | 502 | 11 | 11 | NO RESPONSE | 1 | 248 | 2.51*1 | 468 | 426 | 11 |
| 11 | 1 |  |  | 1 |  |  |  | 11 | 11 |  | 1 |  | 1 |  |  | 11 |

[^3]TABLE 6. RANK ORDER OF INTENDED GRADUATE MAJOR FOR MALES


* based on all gre respondents october, 1980 - june, 1981, who completed gre and background questionnaire

TABLE 7. RANK ORDER OF INTENDED GRADUATE MAJOR FOR FEMALES


* BASED ON ALL GRE RESPONDENTS OCTOBER, 1980 - JUNE, 1981, wHO COMPLETED GRE AND bACKGROUND QUESTIONNAIRE

|  | N | $\%$ | $\begin{array}{r} \text { MEAN } \\ \text { GRE-V } \\ \hline \end{array}$ | $\begin{aligned} & \text { MEAN } \\ & \text { GRE-Q } \end{aligned}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $\Pi$ |  |  |  |  | 11 |
| \|| EDUCATION | 3284 | 20.50 | 477 | 458 | 11 |
| \|| EDUC ADMIN | 1454 | 9.08 | 463 | 465 | 11 |
| \|| PSYCHOLOGY | 983 | 6.14 | 568 | 515 | 11 |
| I\| GUIDANCE/COUNS | 703 | 4.39 | 496 | 456 | 11 |
| $1 \mid$ NURSING | 631 | 3.94 | 525 | 476 | 11 |
| $1 \mid$ PUBLIC ADMIN | 472 | 2.95 | 502 | 484 | 11 |
| \|| LIERARY SCI | 435 | 2.72 | 548 | 472 | 11 |
| I\| COMPUTER SCI | 376 | 2.35 | 513 | 646 | 11 |
| \\| Religious std | 372 | 2.32 | 556 | 513 | 11 |
| I\| SOCIAL HORK | 360 | 2.25 | 534 | 465 | 11 |
| 11 ENGLISH | 346 | 2.16 | 586 | 476 | 11 |
| \|| BUSINESS/CMRCE | 335 | 2.09 | 508 | 555 | 11 |
| [\| EDUC PSYCH | 295 | 1.84 | 527 | 489 | 11 |
| I\| PUBLIC HEALTH | 241 | 1.50 | 544 | 527 | 11 |
| $1 / \mathrm{PHYSICAL}$ ED | 212 | 1.32 | 430 | 449 | 11 |
| \|| OTHER SOC SCI | 207 | 1.29 | 509 | 488 | 11 |
| I\| ECONOMICS | 170 | 1.06 | 474 | 590 | 11 |
| \|| COMMUNICATIONS | 169 | 1.05 | 520 | 488 | 11 |
| \|| HISTORY | 166 | 1.04 | 534 | 464 | 11 |
| \|| HOSPITAL ADMIN | 150 | 0.94 | 493 | 491 | 11 |
| I\| MUSIC | 144 | 0.90 | 507 | 462 | 11 |
| \|| ELECTRICAL ENG | 139 | 0.87 | 441 | 659 | 11 |
| \|| FINE ARTS | 126 | 0.79 | 482 | 435 | 11 |
| $\\|$ POLITICAL SCI | 121 | 0.76 | 517 | 490 | 11 |
| \|| ARCHITECTURE | 115 | 0.72 | 566 | 579 | 11 |
| \\| AGRICULTURE | 111 | 0.69 | 414 | 492 | 11 |
| \|| JOURNALISM | 108 | 0.67 | 569 | 490 | 11 |
| I\| OTHER ENGIN | 106 | 0.66 | 456 | 635 | 11 |
| \|| home economics | 97 | 0.61 | 464 | 432 | 11 |
| \|| OTHER BIOL SCI | 94 | 0.59 | 494 | 549 | 11 |
| \|| BIOLOGY | 92 | 0.57 | 538 | 537 | 11 |
| \|| LINGUISTICS | 92 | 0.57 | 526 | 517 | 11 |
| \\| URBAN DEVELOP | 92 | 0.57 | 507 | 514 | 11 |
| \|| SOCIOLOGY | 86 | 0.54 | 497 | 475 | 11 |
| $1 /$ mathematics | 80 | 0.50 | 458 | 653 | 11 |
| I\| ANTHROPOLOGY | 80 | 0.50 | 568 | 495 | 11 |
| \\| CIVIL ENG | 79 | 0.49 | 418 | 635 | 11 |
| \|| Industrial rel | 78 | 0.49 | 512 | 481 | 11 |
| $1 \mid$ Internat rel | 77 | 0.48 | 567 | 541 | 11 |
| \|| DRAMATIC ARTS | 73 | 0.46 | 557 | 476 | 11 |
| \|| SPEECH | 64 | 0.40 | 523 | 464 | 11 |
| \|| NUTRITION | 63 | 0.39 | 476 | 488 | 11 |
| \|| GEOLOGY | 58 | 0.36 | 534 | 570 | 11 |
| \|| CHEMISTRY | 55 | 0.34 | 439 | 579 | 11 |
| $1 / \mathrm{MECHANICAL}$ ENG | 55 | 0.34 | 454 | 667 | 11 |
| \|| MICROSIOLOGY | 51 | 0.32 | 523 | 526 | 11 |
| 11 INDUSTRIAL ENG | 50 | 0.31 | 459 | 651 | 11 |
| \\| VET MEDICINE | 47 | 0.29 | 527 | 572 | 11 |
| 11 FHYSICS | 47 | 0.29 | 446 | 666 | 11 |
| \|| ART HISTORY | 44 | 0.27 | 597 | 460 | 11 |
| \|| OTH HUMANITIES | 44 | 0.27 | 580 | 522 | 11 |
| \|| OTHER PHYS SCI | 43 | 0.27 | 489 | 620 | 11 |
| 1 |  |  |  |  | 11 |



* BASED ON ALL GRE RESPONDENTS OCTOBER, 1980 - JUNE, 1981, WHO COMPLETED GRE AND BACKGROUND QUESTIONNAIRE

TABLE 9. RANK ORDER OF INTENDED GRADUATE MAJOR FOR CANDIDATES WHO RECEIVED BACHELORS DEGREE I965 OR EARLIER

|  | N | $\%$ | $\begin{array}{r} \text { MEAN } \\ \text { GRE-V } \\ \hline \end{array}$ | $\begin{array}{r} \text { MEAN } \\ \text { GRE-Q } \\ \hline \end{array}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $\pi$ |  |  |  |  | 11 |
| $1 /$ education | 1824 | 26.71 | 491 | 429 | 11 |
| 1\| EDUC ADMIN | 696 | 10.19 | 464 | 428 | 11 |
| \|| PSYCHOLOGY | 358 | 5.24 | 572 | 483 | 11 |
| I\| GUIDANCE/COUNS | 346 | 5.07 | 499 | 425 | 11 |
| \|| NURSING | 290 | 4.25 | 512 | 427 | 11 |
| \|| LIERARY SCI | 282 | 4.13 | 537 | 437 | 11 |
| I\\| SOCIAL WORK | 165 | 2.42 | 540 | 440 | 11 |
| $1 \mid$ PUBLIC ADMIN | 155 | 2.27 | 526 | 472 | 11 |
| $1 \mid$ ENGLISH | 148 | 2.17 | 575 | 425 | 11 |
| $\\|$ RELIGIOUS STD | 140 | 2.05 | 541 | 484 | 11 |
| \|| EDUC PSYCH | 136 | 1.99 | 532 | 462 | 11 |
| \|| bUSINESS/CMRCE | 121 | 1.77 | 527 | 535 | 11 |
| \|| COMPUTER SCI | 120 | 1.76 | 553 | 634 | 11 |
| $1 /$ PUBLIC HEALTH | 89 | 1.30 | 552 | 488 | 11 |
| \|| OTHER SOC SCI | 85 | 1.24 | 506 | 462 | 11 |
| \|| HISTORY | 84 | 1.23 | 590 | 461 | 11 |
| \\| M MUSIC | 83 | 1.22 | 500 | 422 | 11 |
| 11 FINE ARTS | 57 | 0.83 | 513 | 418 | 11 |
| I\| HOME ECONOMICS | 56 | 0.82 | 475 | 417 | 11 |
| $1 \mid$ hospital admin | 54 | 0.79 | 513 | 469 | 11 |
| \|| SOCIOLOGY | 49 | 0.72 | 555 | 467 | 11 |
| If COMMUNICATIONS | 48 | 0.70 | 566 | 458 | 11 |
| \|| PHYSICAL ED | 45 | 0.66 | 418 | 397 | 11 |
| \|| POLITICAL SCI | 42 | 0.62 | 514 | 468 | 11 |
| $\\|$ If ECONOMICS | 37 | 0.54 | 482 | 532 | 11 |
| \|| JOURNALISM | 36 | 0.53 | 586 | 461 | 11 |
| 11 ANTHROPOLOGY | 34 | 0.50 | 597 | 465 | 11 |
| I\| UREAN DEVELOP | 33 | 0.48 | 533 | 453 | 11 |
| \\| ELECTRICAL ENG | 32 | 0.47 | 465 | 619 | 11 |
| \| $\mid$ NUTRITION | 30 | 0.44 | 489 | 443 | 11 |
| \\| $\mid$ SPEECH | 30 | 0.44 | 548 | 417 | 11 |
| \|| OTHER BIOL SCI | 28 | 0.41 | 522 | 504 | 11 |
| \|| OTH humanities | 27 | 0.40 | 560 | 458 | 11 |
| \|| MATHEMATICS | 26 | 0.38 | 571 | 702 | 11 |
| \|| AGRICULTURE | 26 | 0.38 | 415 | 442 | 11 |
| \|| LINGUISTICS | 25 | 0.37 | 521 | 454 | 11 |
| \|| DRAMATIC ARTS | 24 | 0.35 | 556 | 471 | 11 |
| \|| OTHER ENGIN | 24 | 0.35 | 516 | 652 | 11 |
| \|| INDUSTRIAL REL | 24 | 0.35 | 544 | 522 | 11 |
| I\| ART HISTORY | 23 | 0.34 | 600 | 456 | 11 |
| \|| CHEMISTRY | 20 | 0.29 | 493 | 596 | 11 |
| \|| BIOLOGY | 19 | 0.28 | 532 | 549 | 11 |
| \|| PHYSICS | 19 | 0.28 | 476 | 647 | 11 |
| \|| ARCHITECTURE | 16 | 0.23 | 584 | 546 | 11 |
| $1 \mid$ CIVIL ENG | 15 | 0.22 | 455 | 632 | 11 |
| \|| MICROBIOLOGY | 15 | 0.22 | 530 | 469 | 11 |
| \|| OTHER PHYS SCI | 14 | 0.21 | 500 | 623 | 11 |
| I\| OCCUP THERAPY | 14 | 0.21 | 536 | 454 | 11 |
| \|| SPANISH | 14 | 0.21 | 529 | 392 | 11 |
| $1 \mid$ INDUSTRIAL ENG | 13 | 0.19 | 465 | 631 | 11 |
| \|| INTERNAT REL | 13 | 0.19 | 623 | 552 | 11 |
| \|| STATISTICS | 12 | 0.18 | 469 | 640 | 11 |
| 11 |  |  |  |  | 11 |



* BASED ON ALL GRE RESPONDENTS OCTOBER, 1980 - JUNE, 1981, WHO COMPLETED GRE AND BACKGROUND QUESTIONNAIRE

TABLE 10. RANK ORDER OF INTENDED GRADUATE MAJOR FOR MALES AGE 22 OR LESS


* BASED ON ALL GRE RESPONDENTS OCTOBER, 1980 - JUNE, 1981, WHO COMPLETED GRE AND BACKGROUND QUESTIONNAIRE

TABLE 11. RANK ORDER OF INTENDED GRADUATE MAJOR FOR FEMALES AGE 22 OR LESS


* GASED ON ALL GRE RESPONDENTS OCTOSER, 1980 - IINE, 1981 , who COMPLETEO GRE AND BACKGROUND GUESTIONNAIRE

TABLE 12. RANK ORDER OF INTENDED GRADUATE MAJOR FOR MALES AGE 23-29


* BASED ON ALL GRE RESPONDENTS OCTOBER, 1980 - JUNE, 1981, whO COMPLETED GRE AND bACKGROUND QUESTIONNAIRE

TABLE 13. RANK ORDER OF INTENDED GRADUATE MAJOR FOR FEMALES AGE 23-29


* BASED ON ALL GRE RESPONDENTS OCTOBER, 1980 - JUNE, 1981, hHO COMPIETED GRE AND BACKGROUND QUESTIONNAIRE

TABLE 14. RANK ORDER OF INTENDED GRADUATE MAJOR FOR MALES AGE 30-39


* BASED ON ALL GRE RESPONDENTS OCTOBER, 1980 - JUNE, 1981, WHO COMPLETED GRE AND BACKGROUND QUESTIONNAIRE

TABLE 15. RANK ORDER OF INTENDED GRADUATE MAJOR FOR FEMALES AGE 30-39


* BASED CN ALL GRE RESPONDENTS OCTOBER, 1980 - JUNE, 1981, WHO COMPLETED GRE AND BACKGROUND QUESTIONNATRE

TABLE 16. RANK ORDER OF INTENDED GRADUATE MAJOR FOR MALES AGE 40 OR MORE


* BASED ON ALL GRE RESPONDENTS OCTOBER, 1980 - JUNE, 1981, WHO COMPLETED GRE AND BACKGROUND QUESTIONNAIRE

TABLE 17. RANK ORDER OF INTENDED GRADUATE MAJOR FOR FEMALES AGE 40 OR MORE

|  | N | $\%$ | $\begin{aligned} & \text { MEAN } \\ & \text { GRE-V } \end{aligned}$ | $\begin{aligned} & \text { MEA } \\ & \text { GRE- } \end{aligned}$ |  |  |  | N | $\%$ | $\begin{aligned} & \text { MEAN } \\ & \text { GRE-V } \end{aligned}$ | $\begin{array}{r} \text { MEAN } \\ \text { GRE-Q } \\ \hline \end{array}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 11 |  |  |  |  | 11 | 11 |  |  | 1 |  |  | 11 |
| $1 \mid$ EDUCATION | 1787 | 26.97 | 467 | 400 | 11 | 11 | PHARMACOLOGY | 8 | 0.12 | 565 | 540 | 11 |
| \|| NURSING | 559 | 8.44 | 485 | 409 | 11 | 11 | AMER STUDIES | 8 | 0.12 | 536 | 378 | 11 |
| 11 PSYCHOLOGY | 444 | 6.70 | 528 | 431 | II | 11 | BOTANY | 7 | 0.111 | 657 | 590 | 11 |
| \\| 1 EDUC ADMIN | 423 | 6.38 | 462 | 395 | 11 | 11 | NEAR EASt Lang | 6 | 0.09 | 467 | 400 | 11 |
| I\| GUIDANCE/COUNS | 359 | 5.42 | 477 | 391 | 11 | 11 | ITALIAN | 6 | 0.09 | 527 | 412 | 11 |
| \|| LIERARY SCI | 301 | 4.54 | 518 | 414 | 11 | 11 | OTHER PHYS SCI | 6 | 0.09 | 560 | 537 | 11 |
| \\| 1 ENGLISH | 208 | 3.14 | 556 | 410 | 11 | 11 | GEOLOGY | 6 | 0.09 | 590 | 502 | 11 |
| I\| SOCIAL WORK | 193 | 2.91 | 504 | 391 | 11 | 11 | ARCHITECTURE | 6 | 0.09 | 525 | 507 | 11 |
| \\| $\\|$ PU'SLIC ADMIN | 122 | 1.64 | 497 | 417 | 11 | 11 | PHYSIOLOGY | 6 | 0.09 | 470 | 407 | 11 |
| 11 EDUC PSYCH | 108 | 1.63 | 501 | 419 | 11 | 11 | AGRICULTURE | 6 | 0.09 | 460 | 478 | 11 |
| \\| 1 PUBLIC HEALTH | 106 | 1.60 | 492 | 423 | 11 | 11 | PATHOLOGY | 4 | 0.06 | 435 | 468 | 11 |
| \|| OTHER SOC SCI | 93 | 1.40 | 496 | 425 | 11 | 11 | GENETICS | 4 | 0.06 | 650 | 560 | 11 |
| \|| HISTORY | 91 | 1.37 | 563 | 403 | 11 | 11 | ARCHAEOLOGY | 4 | 0.06 | 478 | 330 | 11 |
| \|| RELIGIOUS STD | 77 | 1.16 | 531 | 426 | 11 | 11 | STATISTICS | 4 | 0.06 | 615 | 625 | 11 |
| \|| HOSPITAL ADMIN | 73 | 1.10 | 457 | 389 | 11 | 11 | ELECTRICAL ENG | 3 | 0.05 | 463 | 630 | 11 |
| $\\|$ f FINE ARTS | 71 | 1.07 | 492 | 398 | 11 | 11 | OTHER ENGIN | 3 | 0.05 | 457 | 533 | 11 |
| \\| SOCIOLOGY | 63 | 1.03 | 508 | 435 | 11 | 11 | ZOOLOGY | 3 | 0.05 | 523 | 497 | 11 |
| \|| BUSINESS/CMRCE | 64 | 0.97 | 505 | 446 | 11 | 11 | OTHER FOR LANG | 3 | 0.051 | 540 | 407 | 11 |
| \\| 1 MUSIC | 63 | 0.95 | 498 | 396 | 11 | 11 | OPTOMETRY | 3 | 0.05 | 553 | 507 | 11 |
| \|| HOME ECONOMICS | 53 | 0.80 | 462 | 404 | 11 | 11 | INDUSTRIAL ENG | 2 | 0.03 | 375 | 570 | 11 |
| \|| ANTHROFOLOGY | 51 | 0.77 | 584 | 438 | 11 |  | VET MEDICINE | 2 | 0.03 | 440 | 475 | 11 |
| \\| $\mid$ communications | 51 | 0.77 | 511 | 411 | 11 | 11 | CLASSICAL LANG | 2 | 0.03 | 655 | 410 | 11 |
| \|| SPEECH | 41 | 0.62 | 506 | 392 | 11 | 11 | APPLIED MATH | 2 | 0.031 | 420 | 750 | 11 |
| \|| ART HISTORY | 35 | 0.53 | 545 | 391 | 11 |  | CIVIL ENG | 2 | 0.03 | 620 | 505 | 11 |
| \|| SPANISH | 34 | 0.51 | 434 | 359 | 11 | 11 | BACTERIOLOGY | 2 | 0.03 | 520 | 435 | 11 |
| \|| NUTRITION | 30 | 0.45 | 493 | 429 | 11 |  | FORESTRY | 2 | 0.03 | 645 | 450 | 11 |
| \|| COMPUTER SCI | 30 | 0.45 | 515 | 576 | 11 | 11 | BIOPHYSICS | 2 | 0.03 | 505 | 520 | 11 |
| 11 biOLOGY | 27 | 0.41 | 490 | 459 | 11 | 11 | PHARIMACY | 1 | 0.02 | 360 | 460 | 11 |
| \|| OTH HUMANITIES | 27 | 0.41 | 537 | 383 | 11 |  | OCEANOGRAPHY | 1 | 0.02 | 430 | 300 | 11 |
| \|| INDUSTRIAL REL | 25 | 0.38 | 498 | 433 | 11 | 11 | DENTISTRY | 1 | 0.02 | 450 | 340 | 11 |
| \|| POLITICAL SCI | 25 | 0.38 | 493 | 426 | 11 |  | MEDICINE | 1 | 0.02 | 350 | 500 | 11 |
| I\| URBAN DEVELOP | 25 | 0.38 | 524 | 385 | 11 | 11 | PHYSICS | 1 | 0.02 | 570 | 690 | 11 |
| $1 \mid$ OTHER BIOL SCI | 24 | 0.36 | 495 | 437 | 11 | 11 | anatomy | 1 | 0.02 | 740 | 580 | 11 |
| I\\| FHYSICAL ED | 22 | 0.33 | 478 | 405 | 11 | 11 | PARASITOLOGY | 1 | 0.02 | 450 | 430 | 11 |
| \|| JOURNALISM | 19 | 0.29 | 591 | 430 | 11 | 11 | ENTOMOLOGY | 1 | 0.02 | 530 | 460 | 11 |
| \|| LINGUISTICS | 18 | 0.27 | 467 | 409 | 11 | 11 | RUSSIAN | 1 | 0.02 | 770 | 560 | 11 |
| \|| DRAMATIC ARTS | 17 | 0.26 | 532 | 430 | 11 | 11 | OSTEOPATHY | 0 | 0.0 | 0 | 0 | 11 |
| 11 ECONOMICS | 16 | 0.24 | 467 | 483 | 11 | 11 | MECHANICAL ENG | 0 | 0.0 | 0 | 0 | 11 |
| $\\|$ I INTERNAT REL | 13 | 0.20 | 529 | 456 | 11 |  | FHYS THERAPY | 0 | 0.0 | 0 | 0 | 11 |
| II MICROBIOLOGY | 13 | 0.20 | 512 | 465 | 11 |  | METALLURGY | 0 | 0.0 | 0 | 0 | 11 |
| \\| Compare LIt | 13 | 0.20 | 575 | 406 | 11 | 11 | MINING | 0 | 0.0 | 0 | 0 | 11 |
| I\| OCCUP THERAPY | 12 | 0.18 | 531 | 443 | 11 | 11 | CHEMICAL ENG | 0 | 0.0 | 0 | 0 | 11 |
| 11 LAW | 11 | 0.17 | 456 | 356 | 11 |  | SLAVIC STUDIES | 0 | 0.0 | 0 | 0 | 11 |
| \|| BIOCHEMISTRY | 10 | 0.15 | 451 | 496 | 11 | 11 | ASTRONOMY | 0 | 0.0 | 0 | 0 | 11 |
| I\| GEOGRAPHY | 10 | 0.15 | 522 | 466 | 11 | 11 | AERONAUT ENG | 0 | 0.0 | 0 | 0 | 11 |
| \|| Mathematics | 10 | 0.15 | 521 | 689 | 11 | 11 | FAR EAST LANG | 0 | 0.0 | 0 | 0 | 11 |
| $1 \mid$ SOCIAL PSYCH | 10 | 0.15 | 424 | 351 | 11 | 11 |  |  | 0.0 |  |  | 11 |
| 11 PHILOSOPHY | 10 | 0.15 | 551 | 460 | 11 | 11 |  |  | , |  |  | 11 |
| 11 AUDIOLOGY | 10 | 0.15 | 452 | 420 | 11 | 11 | NOT IN ABOVE | 188 | 2.841 | 468 | 397 | 11 |
| I\\| FRENCH | 10 | 0.15 | 508 | 452 | 11 |  | UNDECIDED | 388 | 5.85 \| | 481 | 411 | 11 |
| I\| CHEMISTRY | 9 | 0.14 | 549 | 561 | 11 |  | total | 6627 | 100.001 | 491 | 410 | 11 |
| \|| GERMAN | 9 | 0.14 | 540 | 422 | 11 | 11 | NO RESPONSE | 162 | 2.39*1 | 478 | 407 | 11 |
| 11 |  |  |  |  | 11 | H |  |  | 1 |  |  | 11 |

* BASED ON ALL GRE RESPONDENTS OCTOBER, 1980 - JUNE, 1981 , bHO COMPLETED GRE AND BACKGROUND QUESTIONINATPE

TABLE 18. RANK ORDER OF INTENDED GRADUATE MAJOR FOR MALES WHO RECEIVED BACHELORS DEGREE 1972-1966


* BASED ON ALL GRE RESPONDENTS OCTOBER, 1980 - JUNE, 1981, who COMPLETED GRE AND bACKGROUND QUESTIONNAIRE

TABLE 19. RANK ORDER OF INTENDED GRADUATE MAJOR FOR FEMALES WHO RECEIVED BACHELORS DEGREE $3972-1966$


* BASED ON ALL GRE RESPONDENTS OCTOBER, 1980 - JuHE, 1981 , who complrtfd gre and background questionnaire

TABLE 20. RANK ORDER OF INTENDED GRADUATE MAJOR FOR MALES WHO RECEIVED BACHELORS DEGREE I9t. 5 OR EARLIER


* BASED ON ALL GRE RESPONDENTS OCTOBER, 1980 - JUNE, 1981, WHO COMPLETED GRE AND BACKGROUND QUESTIONNAIRE

TABLE 21. RANK ORDER OF INTENDED GRADUATE MAJOR FOR FEMALES WHO RECEIVED BACHELORS DEGREE 3.965 OR EARLIER

|  | N | $\%$ | $\begin{array}{r} \text { MEAN } \\ \text { GRE-V } \end{array}$ | $\begin{array}{r} \text { MEAN } \\ \text { GRE-Q } \end{array}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 11 |  |  |  |  | 11 |
| \\| education | 1531 | 32.31 | 490 | 420 | 11 |
| \|| EDUC ADMIN | 373 | 7.87 | 473 | 408 | 11 |
| \|| NURSING | 285 | 6.02 | 513 | 427 | 11 |
| 11 PSYCHOLOGY | 258 | 5.45 | 576 | 473 | 11 |
| \|| GUIDANCE/COUNS | 257 | 5.42 | 499 | 415 | 11 |
| \|| LIERARY SCI | 255 | 5.38 | 537 | 437 | 11 |
| \\| SOCIAL WORK | 140 | 2.95 | 541 | 434 | 11 |
| \|| ENGLISH | 120 | 2.53 | 576 | 419 | 11 |
| 1\| EDUC PSYCH | 102 | 2.15 | 532 | 458 | 11 |
| $1 \mid$ PUBLIC ADMIN | 71 | 1.50 | 543 | 447 | 11 |
| \|| PUBLIC HEALTH | 66 | 1.39 | 555 | 468 | 11 |
| 11 MUSIC | 57 | 1.20 | 509 | 395 | 11 |
| \\| RELIGIOUS STD | 52 | 1.10 | 564 | 457 | 11 |
| I\| HOME ECONOMICS | 51 | 1.08 | 476 | 420 | 11 |
| \|| OTHER SOC SCI | 49 | 1.03 | 497 | 429 | 11 |
| \|| HISTORY | 46 | 0.97 | 593 | 436 | 11 |
| \|| FINE ARTS | 44 | 0.93 | 519 | 413 | 11 |
| I\\| COMPUTER SCI | 36 | 0.76 | 559 | 614 | 11 |
| \|| BUSINESS/CMRCE | 36 | 0.76 | 558 | 479 | 11 |
| \|| SOCIOLOGY | 36 | 0.76 | 548 | 455 | 11 |
| \|| HOSPITAL ADMIN | 34 | 0.72 | 526 | 453 | 11 |
| \|| COMMUNICATIONS | 33 | 0.70 | 560 | 427 | 11 |
| I\| NUTRITION | 29 | 0.61 | 499 | 440 | 11 |
| \|| SPEECH | 26 | 0.55 | 548 | 418 | 11 |
| \\| PhYSICAL ED | 26 | 0.55 | 464 | 399 | 11 |
| I\| ANTHROPOLOGY | 24 | 0.51 | 610 | 469 | 11 |
| \|| OTHER EIOL SCI | 23 | 0.49 | 507 | 475 | 11 |
| \|| ART HISTORY | 19 | 0.40 | 603 | 464 | 11 |
| I\| JOURNALISM | 17 | 0.36 | 612 | 446 | 11 |
| I\| OTH HUMANITIES | 16 | 0.34 | 542 | 437 | 11 |
| \\| UREAN DEVELOP | 15 | 0.32 | 552 | 417 | 11 |
| \|| LINGUISTICS | 15 | 0.32 | 463 | 397 | 11 |
| \\| OCCUP THERAPY | 14 | 0.30 | 536 | 454 | 11 |
| $\\|$ MATHEMATICS | 13 | 0.27 | 582 | 714 | 11 |
| \|| POLITICAL SCI | 13 | 0.27 | 575 | 460 | 11 |
| \|| MICROSIOLOGY | 12 | 0.25 | 521 | 454 | 11 |
| I\| SPANISH | 12 | 0.25 | 535 | 403 | 11 |
| \|| DRAMATIC ARTS | 11 | 0.23 | 564 | 465 | 11 |
| \\| CHEMISTRY | 10 | 0.21 | 516 | 558 | 11 |
| \\| A ARCHITECTURE | 10 | 0.21 | 573 | 553 | 11 |
| \|| INDUSTRIAL REL | 10 | 0.21 | 595 | 518 | 11 |
| I\\| AUDiOLOGY | 9 | 0.19 | 570 | 476 | 11 |
| 11 ECONOMICS | 8 | 0.17 | 456 | 463 | 11 |
| \|| BIOLOGY | 7 | 0.15 | 599 | 589 | 11 |
| I\| compare lit | 7 | 0.15 | 627 | 446 | 11 |
| I\| AMER STUDIES | 7 | 0.15 | 579 | 417 | 11 |
| I\\| FRENCH | 6 | 0.13 | 528 | 468 | 11 |
| \|| NEAR EAST LANG | 5 | 0.11 | 476 | 442 | 11 |
| \\| Statistics | 5 | 0.11 | 498 | 638 | 11 |
| I\\| GERMAN | 5 | 0.11 | 564 | 488 | 11 |
| I\\| SOCIAL PSYCH | 5 | 0.11 | 496 | 402 | 11 |
| 11 PHILOSOPHY | 5 | 0.11 | 596 | 484 | 11 |
| 11 |  |  |  |  | 11 |


|  | N | \% | $\begin{aligned} & \text { MEAN } \\ & \text { GRE-V } \\ & \hline \end{aligned}$ | $\begin{array}{r} \text { MEAN } \\ \text { GRE-Q } \\ \hline \end{array}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 11 |  |  |  |  | 11 |
| \|| BIOCHEMISTRY | 5 | 0.11 | 532 | 536 | 11 |
| \|| AGRICULTURE | 5 | 0.11 \| | 554 | 524 | 11 |
| \|| INTERNAT REL | 4 | 0.08 | 673 | 603 | [1 |
| \|| GENETICS | 4 | 0.05 | 568 | 443 | 11 |
| \|| botany | 4 | 0.08 | 660 | 585 | 11 |
| $\\|$ ITALIAN | 3 | 0.06 | 487 | 433 | 11 |
| \\| OTHER FHYS SCI | 3 | 0.06 | 573 | 577 | 11 |
| $\\|$ electrical eng | 3 | 0.06 | 460 | 627 | 11 |
| \|| GEOGRAFHY | 3 | 0.06 | 637 | 623 | 11 |
| 11 LAW | 3 | 0.06 | 380 | 367 | 11 |
| 11 Pharmacology | 3 | 0.06 | 667 | 580 | 11 |
| \\| CIVIL ENig | 2 | 0.04 | 430 | 575 | 11 |
| I\\| PHYS THERAPY | 2 | 0.04 | 545 | 505 | 11 |
| I\\| PHARMACY | 2 | 0.04 | 420 | 510 | 11 |
| \|| GEOLOGY | 2 | 0.04 | 555 | 535 | 11 |
| \|| PHYSICS | 2 | 0.04 | 495 | 600 | 11 |
| $1 \mid$ PHYSIOLOGY | 2 | 0.04 | 565 | 530 | 11 |
| \|| ENTOMOLOGY | 2 | 0.04 | 600 | 525 | 11 |
| \|| APPLIED MATH | 2 | 0.04 | 420 | 750 | 11 |
| \\| A ASTRONOMY | 2 | 0.04 | 605 | 670 | 11 |
| \|| CLASSICAL LANG | 2 | 0.04 | 660 | 495 | 11 |
| I\| zCOLOGY | 2 | 0.04 | 585 | 535 | 11 |
| $1 \mid$ Parasitology | 2 | 0.04 | 475 | 435 | 11 |
| \|| archamology | 2 | 0.04 | 500 | 450 | 11 |
| II OPTOMETRY | 2 | 0.04 | 670 | 565 | 11 |
| II anatomy | 1 | 0.02 | 740 | 580 | 11 |
| $1 \mid$ MEDICINE | 1 | 0.02 | 560 | 620 | 11 |
| \|| BACTERIOLOGY | 1 | 0.021 | 550 | 470 | 11 |
| \|| BIOFHYSICS | 1 | 0.02 | 700 | 570 | 11 |
| $\\|$ DENTISTRY | 1 | 0.02 | 450 | 340 | 11 |
| \|| INDUSTRIAL ENG | 1 | 0.02 | 800 | 540 | 11 |
| \|| FAR EASt lang | 1 | 0.02 | 510 | 410 | 11 |
| $1 \mid$ mechanical eng | 0 | 0.0 | 0 | 0 | 11 |
| \|| OSTEOPATHY | 0 | 0.0 | 0 | 0 | 11 |
| I] FORESTRY | 0 | 0.0 | 0 | 0 | 11 |
| \| | AERONAUT ENG | 0 | 0.0 | 0 | 0 | 11 |
| 11 CHEMICAL ENG | 0 | 0.0 | 0 | 0 | 11 |
| \|| OTHER FOR LANG | 0 | 0.0 | 0 | 0 | 11 |
| $1]$ METALLURGY | 0 | 0.0 | 0 | 0 | 11 |
| \|| VET MEDICINE | 0 | 0.0 | 0 | 0 | 11 |
| $1 \mid$ MINING | 0 | 0.0 | 0 | 0 | 11 |
| \|| SLAVIC STUdIES | 0 | 0.0 | 0 | 0 | 11 |
| \|| OCEANOGRAPHY | 0 | 0.0 | 0 | 0 | 11 |
| $1 / \mathrm{RUSSIAN}$ | 0 | 0.0 | 0 | 0 | 11 |
| \|| OTHER ENGIN | 0 | 0.0 | 0 | 0 | 11 |
| I\\| PATHOLOGY | 0 | 0.0 | 0 | 0 | 11 |
| 11 |  | 1 |  |  | 11 |
| 11 |  | 1 |  |  | 11 |
| I\| NOT IN ABOVE | 129 | 2.72 | 504 | 426 | 11 |
| \\| UNDECIDED | 218 | 4.60 | 522 | 444 | 11 |
| \|| total | 4738 | 100.00 \| | 516 | 435 | 11 |
| I\| NO RESPONSE | 80 | 1.66*1 | 521 | 455 | 11 |
| 1 |  |  |  |  | 11 |

* BASED ON ALL GRE RESPONDENTS OCTOPER, 1980 - JUNE, 1981, WHO COMPLETED GRE AND BACKGPOUND QUESTTONNAIRE

TABLE 22. RANK ORDER OF INTENDED GRADUATE MAJOR FOR TOTAL SAMPLE


* BASED ON ALL GRE RESPONDENTS OCTOBER, 1930 - JUNE, 1981, WHO COMPLETED GRE AND BACKGROUND QUESTIONNAIRE

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[^0]:    ${ }^{1}$ The author wishes to thank Kirsten Yocom for the analyses of 1980-81 test-taker data and Nancy Burton and Nancy Turner for the analyses of the relationship between admission predictors and first-year graduate school grades.

[^1]:    ${ }^{2}$ The clusters were formed by expert judgment, taking into account likely differences between academic and professional emphases in the traditional categories of humanities, social and behavioral sciences, biological sciences, and physical and mathematical sciences. However, it is interesting to note that the clusters are very similar to those proposed by Biglan (1973), who classified academic departments along the dimensions of hard/ soft, pure/applied, and life/nonlife systems. See Muffo and Langston (1981) for a recent discussion of differences between departments clustered according to Biglan's dimensions.

[^2]:    ${ }^{\text {a }}$ Decimal points have been omitted
    bless than or equal to
    $c_{\text {Greater than or equal to }}$

[^3]:    * BASED ON ALL GRE RESPONDENTS OCTOBER, 1980 - JUNE, 1981, WHO COMPLETED GRE AND bACKGROUND QUEStIONNAIRE

