# Performance Characteristics of Florida's Early Exit Equivalency Candidates 

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#### Abstract

Many questions have been raised recently about the impact of the Early Exit Program on Florida Schools. Are those who pass the GED and earn a high school diploma: (a) high achievers which might lead to a brain drain from state high schools, (b) low achievers who cannot pass high school courses, or (c) fairly representative of the achievement range of high school students in general? Achievement scores on district level achievement tests were compared to GED scores for 410 students from four Florida districts who passed the GED between January, 1981 and May, 1983. Those who passed the GED were neither predominantly "cream of the crop" students nor low achievers on the high school tests. Rather, they represented the entire range of school achievement with the majority falling in the $40-80$ percentile range of the district tests.


The First General Education Development (GED) tests were developed in 1942 by civilian testing experts on the staff of the United States Armed Forces Institute to measure educational achievement, for military purposes, which would be comparable to that of a high school graduate. The GED testing program was

[^0]established in 1945 under the leadership of the American Council on Education. The State of Florida has been awarding high school equivalency diplomas through the GED testing program since 1946. By 1951, any Florida resident, veteran or non-veteran, who was at least 20 years old could earn such a diploma. Today, the test may be available to eligible candidates who are at least 16 years old depending on policies established by local school boards.

The content of the GED tests is intended to represent a sample of the expected outcomes of four years of high school instruction and is selected through high school curriculum reviews. The GED Test Battery, as revised in 1980, consists of 290 items in five subject areas.

| Test Area | Number of Items | Time Limit |
| :---: | :---: | :---: |
| Writing Skills | 80 | 75 minutes |
| Social Studies | 60 | 90 minutes |
| Science | 60 | 90 minutes |
| Reading Skills | 40 | 60 minutes |
| Mathematics | 50 | 90 minutes |

The tests contain questions requiring the use of concepts, general knowledge, and thinking skills. The GED tests measure, among other things, the ability to use information rather than to remember details. The items cover a wide variety of subjects and vary in difficulty. In addition to the regular format, the tests are available in audio cassette, braille, large print formats, French and Spanish.

Florida is one of a few states which provides equal status for the equivalency diploma. Florida law specicifies that a high school equivalency diploma shall have equal status with other high school diplomas for all State purposes. It is, for example, recognized by the State University System and the Community College System as the same as graduation from high school.

The ACE Commission on Educational Credit and Credentials has established a minimum acceptable passing score for the GED; a minimum score of 40 on each test or an average score of 45 on the five tests is required. Approximately 73 percent of the high school graduates in the 1980 national norming group would have qualified for a GED credential with this minimum. Florida's requirement exceeds that minimum.

In fact, no other state in the nation requires a higher passing score than does Florida. Florida's minimum passing score, a minimum of 40 on each test and an average score of 45 , is such that only about 67 percent of the national norming group exceed the requirements for the State of Florida High School Diploma. Three other states, Delaware, Maryland and Utah, have the same passing score as Florida.

In March, 1973, Improving Education in Florida, A Report by the Governor's Citizens Committee on Education, recommended that programs be initiated to allow high school students to accelerate their progress toward a high school diploma. Chapter 75-30, Laws of Florida, was passed by the 1975 Legislature, creating the Secondary Level Examination Program (Section 229.814, FS).

With the passage of Section 229.814, the Legislature established a graduation acceleration mechanism to be based upon a standardized test. In order to implement this law, the State Board of Education selected the GED Test Battery as compatible with existing educational policies and public expectations in Florida.

Typically, a student wishing to participate in the Early Exit Program, as it came to be called, would make application through the high school. A conference would be scheduled with the student, parents, school counselor and other interested parties. If agreement was reached that the student would attempt the GED tests, application was then made to the GED test center. If a passing score was attained, the equivalency diploma was awarded, and the student's tenure in high school ceased. Students passing the GED as part of the program are not permitted to return to high school.

In 1982-83, questions were raised pertaining to the Early Exit Program and the students who were participating in the program. Little data had been collected regarding the reasons why students elected the program, what kinds of students they were or whether the program helped them meet the goals which led them to the Early Exit Program in the first place. Several studies were planned to answer some of the questions.

Research Questions
The purpose of this study was to identify who the Early Exit Program students are with respect to their performance in high school. Are they low achieving students who cannot pass high school courses? Are they high achievers who want to be finished with high school so that they may pursue some other activity? Or, are they fairly representative of the range of high school students in general?

## Procedures

To compare GED scores with high school performance, names and GED scores were obtained for all students who passed the GED as part of the Early Exit Program between January 1, 1981 and May 1, 1983. Four districts were identified which had administered a standardized test to all students in either grade nine or ten and had those test results in a central location. Districts were considered only if they had 200 or more students in the Early Exit Program. Considering the highly mobile population in Florida, it was anticipated that records for only about 50 percent of the listed students would be found. In order for the analyses to have sufficient stability to provide dependable answers, a minimum sample size of 75 for each district selected was judged desirable. A total of 410 students were included in the study; the smallest district group was 80 students.

Three of the selected districts use the California Tests of Basic Skills, two in grade ten and one district in grade nine. The fourth district administers the Stanford TASK in grade nine. District level tests will be referred to as DLT regardless of the time administered or specific test. District records were examined to match names between the district test lists and the list of GED early exit students tested in that district. District scores were collected and recorded.

Analyses of scores were complicated by the fact that certain assumptions underlie the analytic models and that those assumptions could not be met. For example, correlational analysis assumes that one has two sets
of scores for the same group of individuals and implies that those scores were obtained at about the same points in time. While two sets of scores (GED and standardized test scores) were available, the GED scores were obtained at different points in time, with a time lapse between district testing and GED testing ranging from as low as three months to as much as two to three years.

Another assumption of the correlational analysis is that the scores be normally distributed. Since the students in this study were students who has passed the GED, there was little chance that the distribution assumption could be met.

Finally, there were differences between test batteries as well as time of administration among the districts. Both test batteries yeild reading, language, math and total battery scores, but the tests themselves are different. Even the same battery, administered in grade nine and in grade ten, would measure different amounts of exposure to the curricuIum of the schools for the students in the two grades.

All of these factors combine to influence the analysis within a district and comparisons among the districts. Working only with students who have passed the GED creates a restriction of range effect that is known to restrict the size of the correlation coefficient. The impact of differing administration times for the same test, different test batteries, and a differing time lapse between the district test and the GED is not known.

Results

Given the potential impact of these factors, the most noticeable result was the similarities between correlations. Table 1 contains the intercorrelations among the GED tests for the four districts. Of the 40 correlations in the table, only three of the districtpair correlations are significantly different:

Writing with Social Studies Districts D and B
Writing with Science
Writing with Reading
Districts $D$ and $B$
Districts D and B

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## TABLE 1

## Intercorrelations for GED Tests, Four Districts

|  | Social Studies | Science | Reading | Math | District |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Writing | . 53 | . 56 | . 59 | . 42 | A |
|  | . 687 | . 627 | . 717 | . 47 | B |
|  | . 60 | . 54 | . 66 | . 49 | C |
|  | . 48 | . 34 | . 47 | . 55 | D |
| Social |  |  |  |  |  |
| Studies |  | . 65 | . 63 | . 46 | A |
|  |  | . 74 | . 73 | . 53 | B |
|  |  | . 70 | . 69 | . 51 | C |
|  |  | . 61 | . 56 | . 49 | D |
| Science |  |  | . 67 | . 49 | A |
|  |  |  | . 67 | . 53 | B |
|  |  |  | . 70 | . 41 | C |
|  |  |  | . 59 | . 54 | D |
| Reading |  |  |  | . 44 | A |
|  |  |  |  | . 31 | B |
|  |  |  |  | . 48 | C |
|  |  |  |  | . 35 | D |

Approx. N: District A, 110; District B, 85; District C, 135, District D, 80

Only significant differences between correlations for pairs of districts ( $\alpha=.05$ ) are: writing with social studies, science, and reading for Districts B and $D$.

The correlations follow expected patterns, with reading showing higher correlations with the other tests, except for mathematics. When one examines the tests, it is obvious that reading ability plays a major role in performance on all tests except the mathematics test. Statistically, all the correlations are significantly greater than zero, but given the sizes of the samples and the nature of the tests, this comes as no surprise.

Tests of significance were conducted for all district-pairs for each pair of tests. Six tests are possible for each pair of tests, or a total of 60 tests. Computing this many tests, when one fails to meet the assumption of independent samples, increases the probability of declaring two correlations different when, in fact, they are not significantly different. Normally, one would expect to make three false rejections, with an alpha level of . 05, in 60 independent tests. Hence, it is surprising that exactly three differences were declared significant; one would expect several more such decisions in this situation, due to chance alone.

In addition to the low number of significant differences, all three involved Districts D and B. As will be shown later, the distribution of GED scores in District $D$ suffered most from the problem of restriction of range. This is probably the reason for the lower correlations for that district and the resultant significant differences.

Correlations between the GED tests and the District Level Tests (DLT) follow expected patterns as illustrated in Table 2. The restricted range for GED tests in District $D$, mentioned above, is again reflected in the lower correlations with the DLT. Other than that, the correlations are about what one would anticipate given the differences in tests and testing times described earlier. The GED math scores are most highly related to the district math scores; the other GED test scores reflect lower correlations with math than with reading and language. This probably reflects the emphasis on reading in the GED tests.

For District $D$, the correlation between the GED reading and the district math test was

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TABLE 2
Intercorrelations for GED Tests and District Tests

|  | Reading | Language | Math | $\begin{gathered} \text { Total } \\ \text { Battery } \end{gathered}$ | District |
| :---: | :---: | :---: | :---: | :---: | :---: |
| GED |  |  |  |  |  |
| Writing | . 54 | . 69 | . 36 | . 60 | A |
|  | . 59 | . 60 | . 44 | . 60 | B |
|  | . 51 | . 60 | . 43 | . 56 | C |
|  | . 44 | . 51 | . 42 | . 49 | D |
| GED |  |  |  |  |  |
| SocialStudies | .627 | .527 | . 34 | . 56 | A |
|  | .61] | . 46 | . 38 | . 54 | B |
|  | $.43]$ | . 37 | . 32 | . 53 | C |
|  | . 38 |  | . 20 | . 34 | D |
| GED |  |  |  |  |  |
| Science | . 63 | . 557 | . 43 | . 63 | A |
|  | . 50 | . 35 | . 34 | . 44 | B |
|  | . 45 | . 38 | . 34 | . 46 | C |
|  |  | . 32 | . 32 | . 45 | D |
| GED |  |  |  |  |  |
| Reading | . 747 |  | .42] |  |  |
|  | .55 J | . 39 ] |  | . 41.1 ] | ${ }_{\text {B }}$ |
|  | .50- | . 50 | .367 | . 52 | C |
|  | .46 | .33 | .11*] | . $33-$ | D |
| GED |  |  |  |  |  |
| Math | . 46 | . 42 | . 60 | . 58 | A |
|  | . 33 | . 31 | . 57 | . 47 | B |
|  | . 28 | . 40 | . 62 | . 55 | C |
|  | . 34 | . 36 | . 48 | . 44 | D |

Brackets indicate pairs of correlations where a significant difference ( $\alpha=.05$ ) occurs.
*.ll is a correlation which is not significantly greater than zero ( $\alpha=.05$ )
non-significant. Of 13 significant differences between district-pairs, nine involved District $D$.

The correlations, in general, imply that the objectives being measured by the district tests are also measured by the GED tests. Students who do well on the GED are students who did well on the district tests at an earlier time, and vice versa. In other words, they support the idea that the GED tests measure a sampling of high school curricula and skills, as do the tests administered by the districts.

The similarities among the correlations and other descriptors led to the decision to combine the scores for students in Districts A, B and C for further analyses, and to keep the scores for District D separate. Initially, correlations among the GED tests for the combined districts were calculated in order to compare those values with the correlations available from the GED Testing Service. Table 3 shows those comparisons.

As can be seen, the correlations for the combined districts are all lower than the correlations based on national samples. This was to be expected since the Florida sample contains only students who have passed the GED. The correlations follow similar patterns except for mathematics where the correlations are lower than one would expect. A comparison of means and standard deviations for the math tests showed that the mean for the Florida students was more than six points higher than the national GED sample mean. The standard deviation for the Florida group was 2.5 units smaller than the national group value. Hence, the math score distribution appears to be most seriously restricted which could be the cause of the lower correlations.

To examine the relationships between the GED tests and the DLT, further, crosstab tables were constructed for selected pairs of tests. To pass the GED in Florida one can have no standard score less than 40 and an average of 45 or more for the battery. A standard score of 40 means different things for different tests, but for the national norming sample, approximately 20 percent of the seniors tested had standard scores less than 40 . In the combined district analyses, only 11 percent of the students had scores less than 44 on the writing test, and only five percent had

TABLE 3
Intercorrelations among GED Tests
Combined Districts and National Data

|  | Social Studies | Science | Reading | Math |
| :---: | :---: | :---: | :---: | :---: |
| Writing | . 60 | . 56 | . 64 | . 46 |
|  | . 72 | . 70 | . 72 | . 62 |
|  | . 80 | . 76 | . 76 | . 69 |
| Social |  |  |  |  |
| Studies |  | . 70 | . 68 | . 51 |
|  |  | . 79 | . 77 | . 67 |
|  |  | . 82 | . 79 | . 71 |
| Science |  |  | . 69 | . 48 |
|  |  |  | . 74 | . 67 |
|  |  |  | . 77 | . 73 |
| Reading |  |  |  | . 43 |
|  |  |  |  | . 62 |
|  |  |  |  | . 69 |

The first number in each cell is the correlation obtained using standard scores for students in the three combined districts $(\mathrm{N}=337)$.

The second number in each cell is the correlation for a random sample of GED examinees tested in April and May, 1980 ( $3700<\mathrm{N}<3950$ ).

The third number is the correlation based on high school seniors who completed all five tests in the anchor form used in the Spring, 1980, National Standardization $(N=683)$.
scores less than 44 on the reading and math tests. Hence there is a considerable restriction in range at the lower end of the score distribution.

In order to provide a common base for comparisons, scores for the DLT were converted to percentile ranges using appropriate conversion tables provided by the test publishers. Mid-year norms were available for the CTBS fall norms were used for the TASK. For the GED standard scores, a four point score range was used in order to produce a set of tables which would allow one to examine relationships without too much difficulty.

To compare student performance on the GED and the DLT, tables are presented that show relative performance of students in the three combined districts on five pairs of tests. These five pairs were selected because they were judged to be of greatest interest and because they represent the 20 tables which could have been developed had one decided to look at all possible combinations. The pairs are:

| $\quad$ GED | DLT |
| :--- | :--- |
| Writing | Reading |
| Writing | Language |
| Reading | Reading |
| Reading | Language |
| Math | Math |

Two sets of five tables are included. The first set of tables shows the relative performance of students in the combined districts (Tables 4 through 8). Numbers in the cells of these tables are frequencies. For example, in Table 4 , one student had a GED writing standard score of 76 or higher; that person had a DLT percentile of 81-90. Four students had GED scores of 68-71; one's DLT percentile was in the 71-80 range and the other three all scored above the 91 st percentile.

The values in the right hand column show the percent in each GED score range; the bottom row shows the percent in each DLT percentile range. If the Florida group were representative of the national norm groups, one would expect about 30 percent in the first column and 10 percent in each of the other seven columns.

Beneath each table is the Contingency Coefficient (C), that is a measure of relationship between the two distributions. The $C$ values are similar to the
Performance on GED Writing Test and District Level Reading Tests Combined Districts


Note: Numbers in the table are frequencies.

| District Level Reading Test Percentile Ranges |
| :--- |
| $01-30$ $31-40$ $41-50$ $51-60$ $61-70$ $71-80$ $81-90$ |

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TABLE 5
Performance on GED Writing Test and District Level Language Tests

TABLE 6
Performance on GED Reading Test and District Level Reading Tests

Performance on GED Reading Test and District Level Language Tests

TABLE 8
Performance on GED Math Test and District Level Math Tests

|  |  | $\frac{\text { District }}{\text { Level Math Tests Percentile Ranges }}$ |  |  |  |  |  |  |  | Percent in Score Range |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |  |  |  |
| GED | 64-67 | - | - | - | - | 1 | 2 | 6 |  |  |
| Math | 60-63 | 2 | - | 3 | 2 | 2 | $\frac{2}{6}$ | 4 | $\frac{-}{4}$ | 2.8 |
| Test | 56-59 | 3 | 3 | 10 | 8 | 9 | 17 | 4 | 4 | 7.0 |
| Scaled | 52-55 | 13 | 7 | 24 | 10 | 7 | 8 | 2 | 3 | 16.8 |
| Scores | 48-51 | 23 | 10 | 17 | 18 | 9 | 5 | 8 | 1 | 23.9 |
|  | 44-47 | 36 | 14 | 4 | 4 |  |  | 1 | - | 25.4 |
|  | Less |  |  |  | 4 | - | 2 |  | 1 | 18.6 |
|  | than 43 | 8 | 5 | 1 | 1 | 1 | - | - | - | 4.9 |
| Percent in Range |  | 26.2 | 12.0 | 18.2 | 13.2 | 8.9 | 12.3 | 6.5 |  |  |
|  | $C=.64$ |  | Note: | Number | in th | tabl | are | 6.5 |  | $=327$ |

correlation coefficients reported earlier, but they are calculated under a different set of assumptions and cannot, statistically, be compared with the correlation coefficients.

The second set of tables (Table 9 through Table 13) present.the same information, in a different format. In this set, data are presented to allow a comparison of the performance of boys (top value) and girls (bottom value). Values in cells are percents of row totals and show how boys and girls with GED scores, as identified at the left, were distributed over the percentile ranges for the district tests. Column and row totals are based on the numbers of boys and girls as noted. Row percentages may not add to 100 percent due to rounding error. Row and column values are correct to the nearest one-tenth of a percent. In Table 9 for example, we see that in the bottom row (GED score less than 44 ), 43 percent of the boys had DLT percentiles less than 31,20 percent had percentiles in the range $31-40$, etc. For girls, 50 percent had percentiles less than 31,30 percent had percentiles in the range $31-40$, etc. This arrangement enables one to select a GED score range and see how boys and girls in that range performed on the DLT.

To illustrate the severly restricted range found in' District D, Table 14 is included. The low correlations and this restricted range led to the decison to work only with three districts in the combined analysis.

As noted earlier, the question which led to this investigation had to do with the performance of students who had passed the GED on tests taken earlier in their high school careers. Tables 4 through 13 provide information related to that question. For the combined districts, about one half of the students had scores on reading and language tests which placed them below the median score. For the reading, language, and math tests, about 20-25 percent had scores below the 30 th percentile. For all three tests, only about 10 percent of the students had scores in the top 20 percentile range.
TABLE 9
保 Test and District Level Reading Tests for Boys and Girls
$\mathrm{M} \quad \mathrm{F}$
TABLE 10
and Girls Percent in Percent
Ranges


|  |  | .7 |
| ---: | ---: | ---: |
|  | .6 | - |
| 75 |  | 2.6 |
| 33 | 1.1 |  |
|  | 4.6 | 4.0 |
| - |  | 6.6 |
|  | 8.0 |  |
| - |  | 13.2 |
|  | 21.6 |  |

 | 0 | 0 | 0 |
| :--- | :--- | :--- |
| 0 | 0 |  | $\begin{array}{cc}0 & -1 \\ & n \\ 11 & 11 \\ z & z \\ n & 0 \\ \vdots & \end{array}$ 0

Performance on CED Writing Test and District I
TABLE 11
Performance on GFD Reading Test and District Level Reading Tests for Roys and Girls

| District Level Language Test Percentile Ranges |  | Percent int <br> Ranges |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $01-30$ | $31-40$ | $41-50$ | $51-60$ | $61-70$ | $71-80$ | $81-90$ | $91-99$ | M | F |

TABLE 12
Performance on GFD Reading Test and District Leve] Reading Tests for Boys and Girls

TABLE 13

76-up
72-75
68-71

GFD
Writing Test
Scaled
Scores
Percent
in Range
TABLE 14
Comparison of Performance on GED Writing Test
and District $D$ Reading Test

|  |  | District D - Reading Percentile Ranges |  |  |  |  |  |  | Percent in GED |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 01-30 | 31-40 | 41-50 | 51-60 | 61-70 | 71-80 | 81-90 | Score Range |
| GED | 60-63 | - | 1 | - | - | - | 3 | 3 | 8.6 |
| Writing | 56-59 | - | - | 1 | 2 | 3 | 6 | 2 | 17.3 |
| Test | 52-55 | 1 | 1 | 2 | 5 | 5 | 3 | - | 21.0 |
| Scaled | 48-51 | 1 | 2 | 2 | 6 | 5 | 1 | 1 | 22.2 |
| Scores | 44-47 | 3 | 3 | - | 3 | 2 | 2 | 2 | 18.5 |
|  | Less <br> than 43 | 3 | 2 | 1 | 1 | 1 | - | 2 | 12.3 |
| Percent <br> in Range |  | 9.8 | 11.1 | 7.4 | 21.0 | 19.8 | 18.5 | 12.3 | $\mathrm{N}=81$ |

One could infer from these data that those who passed the GED as part of the Early Exit Program were neither predominantly "cream of the crop" students, nor were they students who were at the bottom of the achievement distribution. Students who passed the GED represented the entire range of school achievement, as measured by the district tests. However, there were more students in the $40-80$ percentile range than one would expect.

These results tend to support one of the conclusions reached in the study conducted by Behavioral Science Research in 1984 that Early Exit graduates tended to leave school because of academic frustration or career advancement, rather than because they were having problems with school. The data indicate that one must be farily successful in school in order to succeed on the GED. In other words, taking the GED as part of the Early Exit Program is not an "easy out" for someone who cannot handle regular school work.

Several kinds of comparisons are possible for Tables 9 through 13 that show the relative performance of hoys and girls. In general, girls have more high scores on the GFD writing and reading tests and fewer low scores. The reverse is true for the GED math test, where boys' scores are higher than those for girls.

Recause of the known relationships between the GED and DLT, one expects a similar pattern to be present for the DLT, and it does exist. Again, a higher proportion of girls' scores are found in the higher percentile ranges for reading and language. For the district level math test, the differences between the performance of hoys and girls are not as pronounced. One exnlanation for this could be that the district math tests are more oriented to the curriculum than the GED math test and that in school both boys and girls have the same kinds of experiences in math. Girls may have more out-of-school experiences in reading and language than do hoys and, hence, do hetter on both the GED and DLT reading and writing/ language tests.

## Summary

In summary, the correlations between the GED tests and the DLT support the notion that the GED measures intellectual skills and knowledge which one would expect children to develop during their school years. Publishers of the DLT would make similar claims for their tests. One would hesitate to substitute one test for the other since the purposes for the two types of programs differ and, generally, the district level tests would be more closely related to the curriculum.

The students whose scores were examined were those who passed the GED as part of the Early Exit Program. They represent a fairly wide range of achievement as demonstrated by the district level test scores. The relatively low proportion of students in the lower percentile ranges leads one to infer that if low achieving students take the GED, they do not pass it. In other words, if a student is failing high school classes because of failure to learn, the Early Exit Program will not provide an avenue by which poor achievers can obtain an easy diploma.

A few of the brightest students do appear to elect the Early Exit Program as a way to shorten their tenure in high school. The proportion is not large, and one would not be concerned about any great "brain-drain" from the high schools. A large majority of the brightest students do remain in school and earn regular high school diplomas.

The Early Exit Program seems to be serving an uppermiddle group of students, as measured by the district level tests. These students can do what is asked of them and could graduate from high school, but for some reason they want to shorten their high school career. For this group, the GED provides an opportunity to demonstrate that they have learned and are ready to go to other pursuits.

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