DOCUMENT RESUME

ED 395 945 TM 025 012

AUTHOR DeMauro, Gerald E.
TITLE Passing the NTE: A Classification of State Requirements and Passing Rates, by Ethnicity.
INSTITUTION Educational Testing Service, Princeton, N.J.
REPORT NO ETS-RR-89-15
PUB DATE Mar 89
NOTE 76p.
PUB TYPE Reports - Evaluative/Feasibility (142)

EDRS PRICE MF01/PC04 Plus Postage.
DESCRIPTORS Blacks; *Classification; Cutting Scores; *Ethnicity; Pass Fail Grading; Racial Differences; *Scores; State Legislation; *State Standards; *Teacher Certification; Teacher Evaluation; Whites
IDENTIFIERS *NTE Core Battery; NTE Specialty Area Tests; *Pass Rates

ABSTRACT

It is difficult to estimate the percentage of examinees who pass National Teacher Evaluation (NTE) tests because many users of the tests require that examinees pass different combinations of tests or use different passing scores for each of the tests. This study first develops a taxonomy of state NTE requirements and then computes passing rates for each type of state requirement for both the examinee group impacted by the requirement and for each self-identified ethnic group. An example is the situation in which states require teacher certification candidates to pass all three Core Battery tests and the Specialty Area test most relevant to their own area of interest. For this type of requirement, the percentage of examinees who pass each test is computed, as well as the percentage of examinees who pass all the required tests. Results show considerable variation in passing rates depending on types of requirement and passing scores, and they demonstrate variation in ethnic differences on passing rates. For blacks, the ratio of examinees to white examinees who pass each requirement is related to the passing scores used and the required tests. Appendix A contains a model to discuss impact on reducing cutoff scores, and Appendix B lists the NTE Specialty Area tests. (Contains 18 tables, 3 tables and 6 figures in Appendix A, and 5 references.) (Author/SLD)

RESEARCH REPORT

PASSING THE NTE: A CLASSIFICATION OF STATE REQUIREMENTS AND PASSING RATES, BY ETHNICITY

Gerald E. DeMauro

Educational Testing Service
Princeton, New Jersey
March 1989

Passing the NTE:
A Classification of State Requirements and Passing Rates, by Ethnicity

Gerald E. DeMauro
Educational Testing Service
March 13, 1989

Abstract

It is difficult to estimate the percentage of examinees who "pass" NTE tests because the many users of the tests not only require examinees to pass different combinations of tests, but also use different passing scores for each of the tests. Earlier studies (e.g., Goertz and Pitcher, 1985) computed passing rates for individual tests by applying specific passing scores to national distributions of examinees. However, none of these studies computed the percentage of examinees who passed all the NTE tests required for any state. This study first develops a taxonomy of state NTE requirements. The passing rates for each type of state requirement are then computed both for the examinee group that is impacted by the requirement and for each self-identified ethnic group. For example, one type of requirement is found in states that require teacher certification candidates to pass all three Core Battery tests and the Specialty Area test most relevant to their area of interest. For this type of requirement, the percentage of examinees who pass each test is computed as well as the percentage of examinees who pass all of the required tests. These percentages are computed for all examinees who sent their scores to states of this type and separately for the self-identified Black, Hispanic, "Other," Unknown, and White examinees in this group. Results show considerable variation in passing rates depending on types of requirements and passing scores, and variation in ethnic differences in passing rates. The ratio of percentages of self-identified Black examinees who pass each requirement to percentages of self-identified White examinees who pass each requirement is related to both the passing scores used and the particular group of required tests. The study

provides a methodology and data base for further research in this area, and raises important policy issues for consideration.

Passing the NTE:

A Classification of State Requirements and Passing Rates, by Ethnicity

Gerald E. DeMauro

Introduction

Study Focus

The percentage of examinees who pass NTE Programs tests is difficult to estimate, this is so for several reasons, including the following:

a. Varying combinations of NTE Programs tests are used by different jurisdictions.

b. The tests are often used for different purposes and with different populations.

c. Different passing scores are used by different jurisdictions.

The current study examines the passing rates of examinees on all the NTE Tests required by each state for teacher certification. The combinations of tests required by each state are examined. (The examinee populations are those that have sent their scores to states that require NTE tests as part of initial teacher certification.)

Past Research

Earlier studies of NTE passing rates (e.g., Goertz & Pitcher, 1985) were based on (1) national distributions and (2) cutoff scores used by a selected set of the states that required any NTE Programs tests for initial teacher certification. These studies reported passing rates on individual tests, and did not assess the impact of combinations of tests on the potential teaching pool. Also, since the percentage of examinees

who passed each test was determined by applying the passing scores of specific states to the distributions of all examinees, the estimated passing rates were based both on the performance of examinees who were seeking certification in the states that required those passing scores as well as on the performance of examinees who were seeking certification in states that required different passing scores. Therefor some examinees who passed the requirements of the states from which they were seeking certification were counted as failures, and some examinees who failed the requirements of the states from which they were seeking certification were counted as passers.

Earlier studies also examined the performance of examinees on each test, separately. These examinations did not permit estimation of the relationships of passing or failing rates among all the NTE tests required by any state. There was no estimate, for example, of the relationship between failing the Professional Knowledge test and the Specialty Area test. These estimates are necessary to evaluate not only the characteristics of the tests, but also the impact of the testing requirements on various population groups.

Also, the examinee samples used by the earlier studies were contaminated by the repeated scores of examinees who took the same tests several times during the period sampled for analysis (usually several years). Since examinees who fail tests are likely to take the tests again, the passing rates reported may have underestimated the actual passing rates by oversampling low-scoring examinees.

Nevertheless, these earlier studies suggested that large differences exist in passing rates on tests among examinees who identify

themselves as members of different ethnic groups. For example, Goertz and Pitcher (1985) reported that the passing rate of White examinees on the Test of Communication Skills ranged from 88 percent, applying the highest passing score in use by state certifying agencies to the national sample, to 97 percent, applying the lowest passing score to the national sample. For Black examinees, this range was 41 percent to 88 percent. On the Test of General Knowledge, the White passing rate range was 76 percent to 98 percent. The range for Black examinees was 26 percent to 60 percent. On the Test of Professional Knowledge, the passing rate range was 82 percent to almost 100 percent for White examinees and 35 percent to 92 percent for Black examinees. These data were based on 1981-1984 administrations of the Core Battery. Anrig, Goertz, and McNeil (1986) report similar findings.

The Relationship among Required Tests

These earlier studies provided data about individual tests and not about the constellation of required tests (Baratz, 1986). If passing one Core Battery Test is positively related to passing another, then observed differences among examinee populations overlap. If the relationships among passing the different required NTE Tests is not large, then the actual differences between the percentages of different examinee groups that meet all state requirements may be much larger than the differences in passing rates for any single test. If, among those who fail one required test, a much higher percentage of Black examinees than White examinees fails another required test, then the differences between Black examinee passing rates and White examinee passing rates will be larger

than they are on just one test. If, however, the same examinees fail both tests, then the differences in passing rates will be the same as they are on one test. It remains to examine differences in the passing rates for self-identified ethnic groups on all tests required by NTE user states.

Issues to be Addressed

The current study examines passing rates on the Specialty Area and Core Battery tests, as well as the impact of states' NTE requirements on various examinee groups. It addresses several issues unanswered by past research:

a) What percentage of examinees tested pass all NTE tests required by states?

b) How do the percentages of examinees who pass all NTE test requirements vary by ethnic group, by type of state requirement?

c) To what extent is meeting the state standard for each required NTE test related to meeting the state standard for every other NTE test required by that state?

To answer these questions, data files from March 1987 through July 1987 were merged and analyzed. The major conceptual issues concerning these analyses, discussed in detail below, involved estimating examinee passing rates within

1. each pattern of test use
2. various passing scores
3. the state designated by the examinee as a score recipient
4. self-defined ethnic groups.

Methods

Variations in Tests Used (Table 1)

Since we wish to estimate the percentage of examinees who pass all NTE test requirements for the states in which they are candidates for initial teacher certification, we must account for the various combinations of tests required by different states. Conveniently, states that require candidates to pass NTE tests can be classified according to the specific combination of Core Battery and Specialty Area tests they require. Table 1 shows that these combinations can be grouped as follows:

1. Type I states: States that require initial certification examinees to pass each Core Battery test and a Specialty Area test
2. Type II states: States that require initial certification and alternate route candidates[1] to pass one of the Core Battery Tests and a Specialty Area test
3. Type III states: States that require initial certification (and other) candidates to pass only a Specialty Area test
4. Type IV states: States that require initial certification (and other) candidates to pass one or more Core Battery tests without requiring them to pass any Specialty Area tests.

The logic of grouping examinees according to the requirements of

---

[1]Candidates that are not products of an approved teacher education program.

Table 1

Types of State Requirements to Pass
NTE Programs Tests for Initial
Teacher Certification (Excludes PPST)

Specialty Area Requirement	Core Battery Requirement				
	All Three		General Knowledge	Professional Knowledge	None
	Type I		Type IIa	Type IIb	Type III
Required	Hawaii	Mississippi	California	Arkansas	Oregon
	Indiana	New Mexico	New Jersey		South Carolina
	Kentucky	North Carolina			
	Louisiana	Tennessee			
	Maryland	Virginia			
Not Required	Type IVa			Type IVb	
	Montana			Kansas	
	New York				
	Rhode Island				

the states they are seeking to be certified in can be illustrated as follows:

Among examinees applying to Type II states who pass the Specialty Area tests are some who would fail to meet the Core Battery test requirement. These same examinees might pass the Core Battery test requirement of another state. Moreover, when they take the required Core Battery test, they might also take the Core Battery tests required by other states. Passing or failing these other tests is irrelevant to the certification they seek. Therefore, if we group examinees by the tests they take and not by the requirements of the states to which they apply, we could make serious errors in estimating passing rates. This situation might arise among those New Jersey candidates, for example, who take both Communication Skills and General Knowledge at a New York center but do not send their scores to the New York Education Department. In computing passing rates, the performance of these examinees on Communication Skills should not be considered, because passing Communication Skills is not a New Jersey requirement. The current study uses as a criterion for passing NTE tests the standards (passing scores, particular tests required) that are appropriate for the states where examinees have their scores sent. It also restricts the examinee sample to those examinees who send their scores to states or institutions that require NTE tests.

Differing Score Requirements (Table 2)

Table 2 shows that the different passing scores required by Type I states that use Core Battery are not in the same order across tests. That is, having the highest passing score on one test does not mean a state

Table 2

Order and Ranking of Core Battery Passing Standards for the Ten Type I State Users"

State Requirements Met	If Standards Met, Other States (Checked) Whose Core Battery Requirements Would Be Met:									
	IN	HI	MD	LA	TN	VA	NM	MS	KY	NC
Indiana (IN)	--			X	X	X	X	X	X	X
Hawaii (HI)		--	X	X	X	X	X	X	X	X
Maryland (MD)			--	X	X		X	X	X	X
Louisiana (LA)				--				X	X	X
Tennessee (TN)					--					
Virginia (VA)						--				
New Mexico (NM)							--			
Mississippi (MS)								--	X	
Kentucky (KY)									--	
North Carolina (NC)										--
Communication Skills Rank	1.0	2.0	4.0	6.0	5.0	3.0	7.5	7.5	9.0	10.0
General Knowledge Rank	1.5	1.5	3.5	5.5	5.5	7.5	3.5	7.5	9.0	10.0
Professional Knowledge Rank	1.5	1.5	1.5	4.0	8.5	8.5	10.0	6.0	7.0	5.0
Average Rank of Passing Scores among Ten Type I States (1 = highest passing score)	1.3	1.7	3.0	5.2	6.3	6.3	7.0	7.0	8.3	8.3

"Standards are those that were required in March-June 1987

will have the highest passing score on another test. Therefore, an examinee who passes all of one state's requirements cannot be sure of passing any other state's requirements. This situation arises because states often stress different types of performance, e.g., professional knowledge in one state, general knowledge in another state. As a consequence, the passing scores may be higher on the Test of Professional Knowledge in the first state and higher on General Knowledge in the second. This braiding or interweaving of passing scores is considerably more complicated when Specialty Area tests are also considered.

Table 2, which gives the ranking of the passing scores of the ten Type I states, illustrates this phenomenon. An average rank is computed for the three Core Battery tests. The states are arranged in order of this average rank of their passing scores (1 = highest passing score). Table 2 shows that even when an examinee meets all the passing standards of a state with higher average standards, the examinee cannot be guaranteed that he or she has met all the passing standards of a state with lower average standards. This paradox occurs because of the braiding phenomenon.

Choice of Examinee's State

Central to the issue of passing rate is the question of the state whose standards apply to each examinee's scores. If an examinee's preparedness were being evaluated, examinees could be grouped by their attending institution (where they were prepared), information available from the answer sheet. The appropriate passing standards would then be the standards used by the state in which that attending institution is

located. Since our current focus is on passing rates, the more discriminating variable is the first institution an examinee designates to receive his or her scores (designated institution). Often, this "institution" is a state department of education or state certification agency. The passing standards used by the state in which this designated institution is located were then applied in this study to each examinee's scores. In this way, each examinee was evaluated by only one set of standards--the most appropriate set.

To classify examinees as passing or failing, a file was created of designated institution codes that included the names of the states in which these institutions were located. A second file was then created of state names and the passing scores for each test used by each state. When these two files were merged, the passing scores of each state were paired with each institution within the state. This combination file was then merged with the file that contained examinee test scores and designated institutions. This last merge enabled analysis of examinee passing status in relation to the requirements of the state to which scores were sent.

Designating Score Recipients

When choosing the most appropriate samples to apply to each state's requirements, we selected the examinees who designated, as the first score recipients, institutions only within states that have validated NTE tests for teacher certification. This was done to assure that the most reasonable state requirements were applied to the examinees' performance. Examinees often request that score reports be sent to themselves by coding the designated score recipient as "1000." Scores of

examinees who either left the first recipient designation blank or coded it as "1000" were withheld from the within-state analyses, since it is unknown which standards would most appropriately apply.

Table 3 shows how this strategy of not designating a score recipient other than oneself affects the passing rates of five ethnic groups on each of the Core Battery tests and the Specialty Area tests. For the entire examinee group and each ethnic group on the Core Battery tests, examinees who did not designate an institution in a user state as the first score recipient were less likely to meet the NTE standards of all states than examinees who did designate a user state institution as the first score recipient. For the Specialty Area tests, those who designated user state institutional recipients were more likely to have passed the standards of all states.

These results suggest that earlier studies may have underestimated Core Battery passing rates and overestimated Specialty Area test passing rates. The samples of earlier studies included examinees who did not send their scores to user states and, therefore, may have been ill-prepared to meet those states' requirements. Similarly, Table 4 shows that the Black/White passing differentials are larger on the Core Battery and smaller on the Specialty Area tests when all examinees are included in the analyses, as compared to when analyses are restricted to examinees who designate specific institutions as the first score recipient. The current estimate of the impact of state NTE requirements considers only the appropriate sets of standards for each examinee, and aggregating into examinee groups only those examinees for whom each set of standards applies.

Table 3

Percentage of Examinees Who Passed NTE Requirements, for Examinees Who Designated Score Recipients and Those Who Did Not or Listed Themselves as First Score Recipients, by Test, for Five Ethnic Groups (March-July, 1987)

Group	Test	DI Indicated State Standards Met: All	Some	None	No DI Indicated State Standards Met: All	Some	None	Total State Standards Met: All	Some	None
Black	CS	25.9	56.6	17.5	21.8	56.7	21.5	22.8	56.7	20.5
	GK	11.5	77.3	11.2	9.6	77.9	12.5	10.1	77.8	12.2
	PK	50.9	40.2	8.5	43.0	44.0	13.0	44.8	43.2	10.0
	SAT[1]	29.6	47.3	23.1	20.1	45.8	34.1	23.7	46.4	29.9
Hispanic	CS	42.7	44.1	13.2	32.4	50.7	16.8	36.1	48.4	15.5
	GK	28.7	66.3	5.0	24.2	70.4	6.3	25.7	68.5	5.8
	PK	68.0	28.3	3.8	58.8	33.3	8.0	62.2	31.4	6.4
	SAT[1]	49.3	41.1	9.6	38.4	46.5	15.2	43.5	44.0	12.6
Other	CS	61.5	30.3	8.2	46.7	43.1	10.2	53.5	37.2	9.3
	GK	52.5	46.3	1.2	41.1	55.3	3.5	46.1	51.4	2.5
	PK	84.8	12.9	2.3	70.7	23.0	6.3	77.2	18.4	4.4
	SAT[1]	62.8	31.4	5.8	41.0	48.6	10.4	52.4	39.6	8.0
Unknown	CS	61.5	31.4	7.1	42.7	42.6	14.7	47.9	39.5	12.6
	GK	50.1	46.7	3.2	33.1	60.1	6.8	38.0	56.2	5.8
	PK	80.9	15.3	3.8	61.8	30.8	7.4	67.1	26.5	6.5
	SAT[1]	51.9	34.4	13.7	31.7	45.3	23.0	38.8	41.5	19.8
White	CS	76.5	22.6	0.9	71.0	27.5	1.5	73.0	25.7	1.3
	GK	61.4	38.4	0.2	52.8	46.7	0.5	56.2	43.4	0.4
	PK	92.0	7.7	0.3	88.3	11.2	0.6	89.7	9.8	0.5
	SAT[1]	70.4	27.8	1.8	59.2	37.2	3.7	65.3	32.1	2.6
Total	CS	.697	.247	.056	.632	.321	.047	.691	.309	.040
	GK	.573	.416	.107	.468	.513	.020	.516	.484	.016
	PK	.889	.101	.010	.813	.163	.025	.858	.142	.019
	SAT[1]	65.5	30.1	4.4	50.1	39.8	10.1	58.0	34.9	7.2

[1]Specialty Area test taken by examinee.

Table 4

Passing Rate Ratios of Self-Identified Black Examinees
to Self-Identified White Examinees
Who Met at Least One State Standard, by Whether
or Not They Designated Institutions
as the First Score Recipient,
by Test and Ethnic Group
(March-July, 1987)

Test		Designated Institution First	Total Group	Difference
CS	Black Rate	.825	.795	.030
	White Rate	.991	.987	.004
	Ratio	.832	.805	.027
GK	Black Rate	.888	.878	.010
	White Rate	.997	.996	.001
	Ratio	.891	.882	.009
PK	Black Rate	.911	.880	.031
	White Rate	.997	.995	.002
	Ratio	.914	.884	.030
SA	Black Rate	.769	.701	-.068
	White Rate	.982	.974	-.008
	Ratio	.783	.720	-.063

Choice of Test Administration

The four history files that served as the data base contained scores from the March, April, June, and July 1987 test administrations. The March and June files included Core Battery scores; the April and July files included Specialty Area Test scores.

If a required Core Battery test score was missing from the June file, it was taken, if available, from the March file. Similarly, if a required Specialty Area test score was missing from the July file, it was taken from the April file. If scores from the same test were available on two files, the more recent scores were used, a procedure that might inflate passing rates somewhat, since examinees would have been less likely to retake a test if they had passed it the first time.

Definition of Ethnic Group

The samples were divided into five ethnic groups as follows: (1) Black, Afro-American, or Negro; (2) Mexico-American, Puerto Rican, or other Hispanic; (3) Native-American, Aleut, Inuit, Pacific American, Asian American, or Other, (4) White or Caucasian; (5) Unknown designation (see Table 3). While some of these groupings are very broad, examinees were classified in this way to give sufficient representation to enable meaningful analyses. While such an approach seems straightforward, early analyses revealed that ethnic identification may vary over test administration. It was important for the study to follow individuals of each group.

Ethnic identification was taken as that indicated by the examinees taking the tests at the March 1987 administration of the Core Battery. If

examinees did not take a Core Battery test in March, the ethnic identification was taken from the next Core Battery administration, in June. If a June file was not available, the ethnic identification was taken from the April Specialty Area file. If the examinee did not have any file for March, June, or April, the ethnic identification was taken from the July Specialty Area file. This procedure is not the same as that used for the NTE history files, which takes the most recent ethnic designation.

Throughout this paper, the ethnic identity of a group of examinees is the self-identified group. Therefore, the hispanic examinee group, for example, refers to the group of examinees who identified themselves as hispanic.

There was no attempt to substitute an ethnic identification for the undesignated group. Table 5 shows that the ethnicity of members of this group changes, and attempts to better classify this group using data from other test administrations might have been misleading.

Table 6 shows that, in general, the matched samples contained some inconsistencies in the examinees' identification of their ethnic affiliations. Errors in matching procedures (described in greater detail later) may account for some of these inconsistencies.

If Specialty Area tests were taken in both April and July, and the July test code was not the same as the April test code, i.e., different area tests, the merged files were split, one for each Specialty Area Test. These files were merged with the March and June Core Battery file. Therefore, the number of records matched the number of certification applications rather than the number of examinees. Hence, an examinee

Table 5

Change in Examinee Self-Reported Ethnic Group
From March to July, 1987 Administrations

	March to April	March to June	March to July	June to July
Changed Ethnic N	173	19	44	74
Group % Match[a]	4.0	5.8	5.9	3.0
Original[b]	0.4	0.0	0.1	0.2
Original N	43,334	43,334	43,334	38,777
Went from Unknown to:				
Black N	5	2	7	2
% Match Unknown	3.5	18.8	24.1	2.3
Hispanic N	2	1	0	0
% Match Unknown	1.4	9.1	0.0	0.0
Other N	7	1	1	4
% Match Unknown	4.9	9.1	3.5	4.7
Unknown N	94	3	11	61
% Match Unknown	65.7	27.3	37.9	70.9
White N	35	4	10	19
% Match Unknown	24.5	36.4	34.5	22.1
Original Unknown N	2,558	2,558	2,558	2,821
Match Unknown N	143	11	29	86
Went to Unknown from:				
Black N	5	2	5	8
%	2.7	22.2	16.1	8.5
Hispanic N	1	1	0	1
%	0.5	11.1	0.0	1.1
Other N	10	1	3	6
%	5.4	11.1	9.7	6.4
Unknown N	94	3	11	61
%	50.5	33.3	35.5	64.9
White N	76	2	12	18
%	40.9	22.2	38.7	19.2
Unknown N	186	9	31	94

[a]Those who were matched from administrations in both of the indicated months.
[b]The sample size of the earlier month of comparison.

Table 6

Examinees Who Changed Ethnic
Group Over Test Administrations,
March 1987 - July 1987

March Identification		March to April	March to June	March to July	June to July
Black	Change N	6	2	5	9
	% Match[a]	6.7	11.6	6.7	
Hispanic	Change N	3	1	1	4
	% Matcha	5.8	7.7	5.0	7.3
Other	Change N	29	3	5	16
	% Match[a]	11.7	9.7	11.6	7.0
Unknown	Change N	49	8	18	25
	% Match[a]	34.3	72.7	62.1	29.1
White	Change N	86	5	15	20
	% Match[a]	2.3	2.1	2.4	1.0

[a] Those of this ethnic group in the earlier month who were matched to the later administration.

seeking a certificate, in Special Education and Elementary Education may have been represented twice if he/she had two Specialty Area tests.[2]

For Type I states, the two modified files (Specialty Area and Core) were merged. For these ten states, 17,104 records were available. Since Type IIa states only required Specialty Area and General Knowledge test scores, merges included records that did not have Communications Skills or Professional Knowledge scores. Similar variations in procedures used to merge Core Battery and Specialty Area files, including no merges if both batteries were not required, were used to accommodate all the possible variations of NTE requirements.

File Merging

The March 1987 through June 1987 NTE data files were merged using scrambled social security numbers and dates of birth. The two Specialty Area Test files were merged first. The aggregated April and July files contained 55,221 Specialty Area test records. Among these, 2,913 examinees (5.3 percent) took the same test in July (or at least had the same test code) as they had in April. In these cases, the June (most recent) score was used.

The same algorithm (most recent score) was used to merge the March and June data files. In March and June, there were 76,777 records of examinees who took one, two, or three Core Battery tests. For each of the

---

[2]If this examinee did not retake the Core Battery tests, the examinee's Core Battery scores would be repeated in the data files, since the same scores were used for two certification applications.

three tests, the June score was used unless no June score was available. In these instances, the March test score was used.

Analyses

Percentages of examinees who passed each combination of required tests were computed for each type of test use, for the total group and by ethnic group. Phi coefficients estimated the relationships of passing status among the tests. Ratios of passing rates were computed by dividing the proportion of each self-identified ethnic group (other than White) that passed each NTE requirement by the proportion of self-identified White examinees that passed that requirement. The results are reported in terms of the four types of state NTE requirements (Tables 7, 10a, 10b, 12, 13a, and 13b).

Results

Type I States

In general, there were too few examinees who identified themselves as belonging to any group except White within any state to support within state analyses. Across states, however, there was a large difference in the passing rates of Black (34.5) and White (91.0) examinees (Table 7). The most successful non-White group was the "Other" group, 80.1 percent of whom sent scores to Hawaiian institutions. In fact, it is the significantly higher passing rate of this Hawaiian group ($\chi^2(1) = 4.22$, $p < .01$, compared to "other" examinees from other states) that accounts for the high passing rate.

There were large differences among groups in which tests were the most difficult. Table 8 shows all the possible combinations of tests required by Type I states and the numbers of examinees who failed each combination, by ethnic group. Among single tests, Professional Knowledge appeared to be the least difficult. Table 9 presents the phi coefficients of the relationship of passing each required test to passing each other required test. The strongest relationship in Type I states in passing or failing tests was between Professional Knowledge and Communication Skills (.548).

Type II States

Tables 10a and 10b present results for students who designated institutions in state Types IIa and IIb as the first institutions to receive their score reports. Table 10a shows that for students who sent scores to Type IIa states, the required Specialty Area test was more

Table 7

Passing Rates, by Self-Identified Ethnic Group,
For All Required NTE Tests in Type I States, March-July, 1987

DI State	Examinee Status	Black	Hispanic	Other	Unknown	White	Total
A	Pass	2	3	264	23	244	536
	Fail	3	0	60	7	38	108
	% Pass	40.0	100.0	81.5	76.7	86.5	83.2
B	Pass	5	4	7	6	554	576
	Fail	6	4	1	1	70	82
	% Pass	45.5	50.0	87.5	85.7	88.8	87.5
C	Pass	9	4	9	6	712	740
	Fail	4	1	2	0	22	29
	% Pass	69.2	80.0	81.8	100.0	97.0	96.2
D	Pass	5	2	0	1	113	121
	Fail	11	2	2	3	11	29
	% Pass	31.3	50.0	0.0	25.0	91.1	80.7
E	Pass	22	4	19	43	1023	1111
	Fail	46	2	7	14	116	185
	% Pass	32.4	66.7	73.1	75.4	89.8	85.7
F	Pass	16	2	3	9	364	394
	Fail	40	0	1	9	54	104
	% Pass	29.6	100.0	75.0	50.0	87.1	79.1
G	Pass	0	28	9	17	334	388
	Fail	1	28	6	2	25	45
	% Pass	0.0	71.8	60.0	89.5	93.0	89.6
H	Pass	4	--	1	5	103	113
	Fail	3	--	1	1	2	7
	% Pass	80.0	--	50.0	83.3	98.1	94.2
I	Pass	2	2	3	3	268	278
	Fail	5	0	1	1	31	38
	% Pass	28.6	100.0	75.0	75.0	89.6	88.0
J	Pass	6	1	3	6	53	269
	Fail	16	1	2	2	25	46
	% Pass	27.3	50.0	60.0	75.0	91.0	85.4
Total	Pass	71	50	318	119	3968	4526
	Fail	135	21	83	40	394	673
	% Pass	34.5	70.4	79.3	74.8	91.0	87.1

Table 8

Tests Failed, by Self-Identified Ethnic Group, for All Type I States, March-June 1987

Test(s) Failed (only)	Black		Hispanic		Other		Unknown		White		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
Communication Skills (CS)	9	4.9	4	5.6	10	2.5	4	2.5	56	1.3	84	1.6
General Knowledge (GK)	9	4.4	4	5.6	9	2.2	1	0.6	67	1.5	90	1.7
Professional Knowledge (PK)	5	2.4	--	--	3	0.7	--	--	29	0.7	37	0.7
Specialty Area Test (SAT)	18	8.7	1	1.4	13	3.2	9	5.7	102	2.3	143	2.8
CS and GK	8	3.9	4	5.6	8	2.0	2	1.3	22	0.5	44	0.8
CS and PK	2	1.9	--	--	5	1.2	2	1.3	19	0.4	28	0.5
CS and SAT	4	1.9	--	--	6	1.5	3	1.9	6	0.1	19	0.4
GK and PK	4	1.9	--	--	--	--	1	0.6	7	0.2	12	0.2
GK and SAT	1	0.5	2	2.8	1	0.2	3	1.9	11	0.3	18	0.3
PK and SAT	8	3.4	--	--	--	--	1	0.6	9	0.2	18	0.3
CS, GK, and PK	9	4.4	1	1.4	6	1.5	3	1.9	15	0.3	34	0.6
CS, GK, and SAT	6	2.9	--	--	4	1.0	3	1.9	11	0.3	24	0.5
CS, PK, and SAT	7	3.4	--	--	4	1.0	1	0.6	4	0.1	16	0.3
GK, PK, and SAT	4	1.9	1	1.4	1	0.2	--	--	11	0.3	17	0.3
CS, GK, PK, and SAT	40	19.4	4	5.6	13	3.2	7	4.4	25	0.6	89	1.7
None	71	34.5	50	69.6	318	79.3	119	74.8	3968	91.1	4526	87.1
Total CS	86	41.7	13	18.3	56	14.0	23	14.5	158	3.6	338	6.5
Total GK	81	39.3	16	22.5	42	10.5	20	12.6	169	3.9	328	6.3
Total PK	79	38.3	6	8.5	32	8.0	15	9.4	119	2.7	251	4.8
Total SAT	88	42.7	8	11.3	42	10.5	27	17.0	179	4.1	344	6.6
Total Examinees	206	100.0	71	100.0	401	100.0	159	100.0	4362		5199	
% Pass	34.5		70.4		79.3		74.8		91.0		87.1	

Table 9

Relationships Among Passing/Failing
Status of Required Tests,
Type I States, March-July 1987
(Phi Coefficients)

Tests:	Communication Skills	General Knowledge	Professional Knowledge	Specialty Area
Communication Skills	--	.544	.548	.394
General Knowledge		--	.503	.402
Professional Knowledge			--	.445
Specialty Area				--

Table 10a

Passing Rates, by Self-Identified Ethnic Group, For All Required NTE Tests in Type IIa States, March-June, 1987

DI State	Examinee Status	Black	Hispanic	Other	Unknown	White	Total
K	Pass GK	3	7	9	8	107	134
	Fail GK	0	0	0	0	0	0
	Pass SAT	0	3	6	4	63	76
	Fail SAT	3	4	3	4	44	58
	Pass All	0	3	6	4	63	76
	% Pass	0.0	42.9	66.7	50.0	58.9	56.7
L	Pass GK	4	3	2	18	173	200
	Fail GK	1	2	0	1	4	8
	Pass SAT	4	3	1	15	158	181
	Fail SAT	1	2	1	4	19	27
	Pass All	4	3	1	15	155	178
	% Pass	80.0	60.0	50.0	78.9	87.6	85.6
Total that Require GK	Pass GK	7	10	11	26	280	334
	Fail GK	1	2	0	1	4	8
	Pass SAT	4	6	7	19	221	257
	Fail SAT	4	6	4	8	63	85
	Pass All	4	6	7	19	218	254
	% Pass	50.0	50.0	63.6	70.4	76.8	74.3

Table 10b

Passing Rates by Self-Identified Ethnic Group, For All Required NTE Tests in Type IIb State, March-July, 1987

DI State	Examinee Status	Black	Hispanic	Other	Unknown	White	Total
M	Pass PK	19	2	11	15	601	648
	Fail PK	4	0	0	1	11	16
	Pass SAT	18	2	11	13	592	636
	Fail SAT	5	0	0	3	20	28
	Pass All	18	2	11	13	587	631
	% Pass	78.3	100.0	100.0	81.3	96.9	95.0
Total Type II	Pass Core Test	26	12	22	41	881	982
	Fail Core Test	5	2	0	2	15	24
	Pass SAT	22	8	18	32	813	893
	Fail SAT	9	6	4	11	83	113
	Pass All	22	8	18	32	805	885
	% Pass	71.0	57.1	81.8	74.4	89.8	88.0

difficult to pass than was the Test of General Knowledge. This was true for all self-identified ethnic groups. Table 10b shows that passing Specialty Area tests was also more difficult for students who sent scores to Type IIb states than was passing the Test of Professional Knowledge.

For examinees who sent scores to Type IIa states (Table 11), the relationship between passing General Knowledge and passing the Specialty Area test was much lower (.135) than it was for examinees who sent scores to Type I states (Table 9). However, among those who sent scores to the Type IIb state, the relationship between passing Professional Knowledge and passing the Specialty Area test (.506) was somewhat higher than was this relationship for Type I states (.445). In Type IIa states, the Test of General Knowledge is used as a requirement for alternate route certification. Specialty Area tests are also used for out-of-state certification candidates in California. Consequently, there may not be the strong relationship in the teacher education curriculum between the knowledge, skills, and abilities required by the Test of General Knowledge and the Specialty Area tests in these states as there is in states where both tests are required of all candidates.

Table 11 shows the relationships between passing and failing the NTE tests required by Type IIa and IIb states. The strongest relationship is between Professional Knowledge and the Specialty Area test (.506). This is somewhat higher than was evident in the Type I states (.445).

Type III States

Two states did not require Core Battery tests. The Specialty Area test passing rate for Black examinees in these states was 33.8 percent,

Table 11

Relationships Between Passing/Failing
Status on Required Core Battery Test and
the Required Specialty Area Test,
Type II States, March-July 1987
(Phi Coefficients)

Required Core Battery Test	n	Relationship to Specialty Area Test
General Knowledge	342	.135
Professional Knowledge	664	.506
Overall Core	1,006	.274

compared to 84.7 percent for White examinees. Examinees who did not identify an ethnic group also had substantially lower (45.3 percent) passing rates than did self-identified White examinees (Table 12).

It is interesting that the Specialty Area test passing rate among Black examinees was 57.3 percent for Type I states and 71.0 percent for the combined Type II states. The ratio of these to the White examinee passing rate were .597 and .785, respectively. For Type III states, the ratio was much lower, .378 (33.8 divided by 84.7).

In fact, in the four Type I states that are geographically closest to the largest Type III state, the passing rate for Black examinees on the Specialty Area test was 69.4 percent. The ratio of this rate to the passing rate for White examinees in these states was .713, considerably higher than the comparable ratio in the largest Type III state (.396). Obviously, the differences in passing rates between Black and White examinees for Type I and Type III states is not simply related to regional differences.[4] It is also true that the passing rate for White examinees (84.6 percent) in the largest Type III state was considerably lower compared to the rates for the four neighboring Type I states (97.3 percent). Perhaps higher Specialty Area test passing score standards used by the Type III state account for the lower passing rate.

Analyses of NTE score distributions (DeMauro, 1986; Appendix A) show that the relative representation of Black and White examinees between two scores determines whether raising a passing score to the higher of the two scores advantages or disadvantages Black examinees with respect to

---

[4]There are no Type I states adjoining the other Type III states.

Table 12

Passing Rates, by Self-Identified Ethnic Group, for All Required NTE Tests in Type III States, March-July 1987

DI State	Examinee Status	Black	Hispanic	Other	Unknown	White	Total
N	Pass	71	5	11	59	1,124	1,270
	Fail	141	2	5	76	204	428
	% Pass	33.5	71.4	68.8	43.7	84.6	74.8
O	Pass	1	2	2	4	65	74
	Fail	0	0	0	0	10	10
	% Pass	100.0	100.0	100.0	100.0	86.7	88.1
Total	Pass	72	7	13	63	1,189	1,344
	Fail	141	2	5	76	214	438
	% Pass	33.8	77.8	72.2	45.3	84.7	75.4

White examinees. It may well be that if higher passing scores are used by the Type III state, it would affect both the passing rates of Black and White examinees as well as the ratio of the passing rates of these two groups.

To test this hypothesis, the passing scores employed for the Specialty Area tests required by this Type III state were compared to the passing scores required for the same tests by the four neighboring Type I states. The first Type I neighbor state required 19 of the same Special Area tests. The second and third neighbor states required 16 of the same Specialty Area tests, and the fourth neighbor state required 20 of the same Specialty Area tests. The Type III state required higher passing scores than the first Type I neighbor on 17 of the 19 tests. The same passing score was required on the other two tests. In comparison to the passing scores required by the second and third neighbor states, the Type III state required higher passing scores for nine of the 16 Specialty Area tests it required in common with the second Type I neighbor (one was the same), and for 15 of the 16 Specialty Area tests it required in common with the third Type I neighbor state were higher (one was the same). In comparison to the passing scores for the 20 Specialty Area tests it required in common with the fourth Type I neighbor state, 17 of the passing scores were higher for the Type III state, and one was the same. Clearly, the higher passing standards in use in the largest Type III state influence the lower passing rates for Type III states on Specialty Area tests. In turn, lower passing rates are related to larger Black/White passing differentials.

Type IV States

Tables 13a and 13b show the performance of self-identified ethnic groups that sent their NTE scores to Types IVa and IVb states, respectively. Table 14 shows the relationships between passing and failing all required NTE tests in Types IVa and IVb states.

The passing rate for the total group that sent scores to Type IVa states was 84.5 percent (Table 13a). Among the self-identified ethnic groups, this rate was highest for White examinees (88.1 percent) and lowest for Black examinees (44.2 percent). The ratio of these two rates was .502.

The least difficult test to pass for all groups was the Test of Professional Knowledge, which had a 92.7 percent passing rate (Table 13a). For every group, the most difficult test was the Test of General Knowledge, which had an overall passing rate of 89.2 percent.

Table 13b shows that the passing rate on the Test of Professional Knowledge for examinees who sent their scores to the Type IVb state was very high (96.5 percent). It exceeded the passing rate on this test for Type I states (95.6 percent), but not for the Type IIb state (97.6 percent). Among all Types of state NTE users, the passing rates on the Test of Professional Knowledge were very high.

For examinees who sent scores to Type IVa states, the relationship of passing status on Communication Skills to that on Professional Knowledge (.618) was higher than that for either General Knowledge and Communication Skills (.572) or General Knowledge and Professional Knowledge (.513) (Table 14). This order of relationships replicates the finding for Type I states (Table 9).

Table 13a

Passing Rates, by Self-Identified Ethnic Group, for All Required NTE Tests in Type IVa States, March-July 1987

DI State	Tests Failed	Black		Hispanic		Other		Unknown		White		Total	
		N	%	N	%	N	%	N	%	N	%	N	%
P	CS (only)	--	--	--	--	--	--	--	--	9	1.3	9	1.3
	GK (only)	--	--	--	--	--	--	--	--	6	0.9	6	0.8
	PK (only)	--	--	1	50.0	2	14.3	--	--	10	1.4	13	1.7
	CS & GK (only)	--	--	--	--	--	--	--	--	1	0.1	1	0.
	CS & PK (only)	--	--	--	--	--	--	1	3.1	15	2.1	16	2.1
	GK & PK (only)	--	--	--	--	--	--	--	--	2	0.3	2	0.3
	All three	--	--	--	--	--	--	--	--	12	1.7	12	1.6
	None	1	100.0	1	50.0	12	85.7	31	96.9	651	92.2	696	92.2
Q	CS (only)	9	6.0	7	4.6	3	3.8	8	3.2	64	1.9	91	2.2
	GK (only)	19	12.6	5	3.3	2	2.5	17	6.8	137	4.0	180	4.4
	PK (only)	--	--	2	1.3	1	1.3	7	2.8	35	1.0	45	1.1
	CS & GK (only)	12	8.0	12	8.0	2	2.5	7	2.8	60	1.8	93	2.3
	CS & PK (only)	1	0.7	--	--	5	6.3	6	2.4	26	0.8	38	0.9
	GK & PK (only)	2	1.3	5	3.3	--	--	2	0.8	16	0.5	25	0.6
	All Three	42	27.8	48	31.8	7	8.8	23	9.2	81	2.4	201	5.0
	None	66	43.7	72	47.7	60	75.0	179	71.9	3013	87.8	3390	83.4
R	CS (only)	1	25.0	1	20.0	--	--	1	5.9	19	6.5	22	6.8
	GK (only)	1	25.0	1	20.0	--	--	1	5.9	8	2.8	11	3.4
	PK (only)	--	--	--	--	--	--	--	--	1	0.3	1	0.3
	CS & GK (only)	--	--	1	20.0	--	--	--	--	11	3.8	12	3.7
	CS & PK (only)	--	--	--	--	--	--	2	11.8	5	1.7	7	2.2
	GK & PK (only)	--	--	--	--	--	--	--	--	3	1.0	3	0.9
	All Three	--	--	--	--	--	--	2	11.8	8	2.8	10	3.1
	None	2	50.0	2	40.0	5	100.0	11	64.7	236	81.1	256	79.5
Total	CS (only)	10	6.4	8	5.1	3	3.0	9	3.0	92	2.1	122	2.4
	GK (only)	20	12.8	6	3.8	2	2.0	18	6.0	151	3.4	197	3.8
	PK (only)	--	--	3	1.9	3	3.0	7	2.3	46	1.0	59	1.1
	CS & GK (only)	12	7.7	13	8.2	2	2.0	7	2.3	72	1.6	106	2.1
	CS & PK (only)	1	0.6	--	--	5	5.1	9	3.0	46	1.0	61	1.2
	GK & PK (only)	2	1.3	5	3.2	--	--	2	0.7	21	0.5	30	0.6
	All Three	42	26.9	48	30.4	7	7.1	25	8.4	101	2.3	223	4.3
	None	69	44.2	75	47.5	77	77.8	221	74.2	3900	88.1	4342	84.5
	Total CS	65	41.7	69	43.7	17	17.2	50	16.8	311	7.0	512	10.0
	Total GK	76	48.7	72	45.6	11	11.1	52	17.4	345	7.8	556	10.8
	Total PK	45	28.8	56	35.4	15	15.2	43	14.4	214	4.8	373	7.3
	Total	69	44.2	75	47.5	77	77.8	221	74.2	3900	88.1	4342	84.5

Table 13b

Passing Rates by Self-Identified Ethnic Group, for the Test of Professional Knowledge in Type IVb State, March-July 1987

Group		Pass	Fail
Black	N	8	2
	%	80.0	20.0
Hispanic	N	9	2
	%	81.8	18.2
Other	N	12	0
	%	100.0	0.0
Unknown	N	14	1
	%	93.3	6.7
White	N	918	30
	%	96.8	3.2
Total	N	961	35
	%	96.5	3.5

Table 14

Relationships Among Passing/Failing
Status of Required Tests,
Type IVa States, March-July, 1987
(Phi Coefficients)

	Communication Skills	General Knowledge	Professional Knowledge
Communication Skills	--	.572	.618
General Knowledge		--	.513
Professional Knowledge			--

Passing Rate Ratios, by Ethnic Group, All State Types

Table 15 shows the ratios of the passing rates of Black examinees, Hispanic examinees, other examinees, and unidentified examinees to the passing rates of White examinees. Several interesting findings are obvious.

For example, the percentage of Black examinees is closer to that of White examinees on the test of Professional Knowledge than on other Core Battery tests (Table 15). The difference in the relative performance of Black examinees on the Test of Professional Knowledge compared to their relative performance on other Core Battery tests is not nearly as large in Type I states as it is in Type IVa states. For example, the ratio of passing rates for Black and White examinees on the Test of Professional Knowledge in Type IVa states (.748) is larger by .121 and .192 than this ratio on Communication Skills and General Knowledge, respectively. However, in Type I states, the ratio of passing rates for these groups (.634) is only .002 larger than on General Knowledge and .029 larger than on Communication Skills.

It is interesting that the differences between the cutoff scores used by Type I states and those used by Type IVa states are much higher on Communication Skills and General Knowledge. This can be seen if one ranks the cutoff scores used by each state from low (1) to high (13 for Communication Skills, 15 each for General Knowledge and Professional Knowledge). The average ranks for Type I states were 6.1 for Communication Skills, 6.2 for General Knowledge, and 7.8 for Professional Knowledge. For Type IVa states, these averages were 10.2, 11.0, and 8.0, respectively. For Type IVa states, the relatively more demanding cutoff

Table 15

Passing Rate Ratios
For All Groups, by Type of
State Requirements,
March-July 1987

Regular	Ratio	Type I	Type IIa	Type IIb	Type III	Type IVa	Type IVb
Communication Skills	B/W	.605	--	--	--	.627	--
	H/W	.848	--	--	--	.605	--
	O/W	.892	--	--	--	.890	--
	U/W	.887	--	--	--	.895	--
General Knowledge	B/W	.632	.887	--	--	.556	--
	H/W	.806	.845	--	--	.590	--
	O/W	.931	1.014	--	--	.964	--
	U/W	.909	.977	--	--	.896	--
Professional Knowledge	B/W	.634	--	N/A[a]	--	.748	.826
	H/W	.940	--	N/A[a]	--	.679	.845
	O/W	.946	--	1.018	--	.891	1.033
	U/W	.931	--	.955	--	.899	.964
Specialty Area	B/W	.597	.643	.809	.378	--	--
	H/W	.925	.643	N/A[a]	.871	--	--
	O/W	.933	.818	1.034	.808	--	--
	U/W	.865	.904	.840	.507	--	--
All NTE Requirements	B/W	.379	.651	.816	.378	.498	.826
	H/W	.774	.651	N/A[a]	.871	.543	.845
	O/W	.871	.828	1.043	.808	.854	1.033
	U/W	.822	.917	.848	.507	.819	.964

[a]Number less than five examinees

scores in Communication Skills and General Knowledge are associated with greater Black/White passing differentials (smaller passing rate ratios), similar to the differentials found among Type I states. However, the relatively less demanding Professional Knowledge standard results in smaller Black/White scoring differentials.[4]

Despite this finding, one could not conclude that the cutoff score, by itself, determines scoring differentials. For example, the passing rate ratio of Black and White examinees is much higher for Type IVa states (.748) than for Type I states (.634), even though Type IVa states have slightly higher cutoff scores. Clearly, other unmeasured variables such as required curriculum and admissions policies influence these scoring differentials.

Specialty Area Tests

A separate analysis of the Specialty Area tests (see Appendix A for test names) was made to enable an evaluation of the relative difficulty of each. Tables 16a-16d show that the highest rates on Specialty Area tests were attained by the examinees who had their scores sent to Type 1 states. The most difficult tests were Mathematics and Chemistry, Physics, and Science.

The interpretation of differences in passing rates on Specialty Area tests is limited. Two levels of selection are operant on the examinee sample: at the state level, in which different tests are

---

[4]The reader is reminded of a similar relationship between passing score and passing rate ratios on Specialty Area tests in Type I and Type III states.

Table 16a

Passing Rates on Specialty Area Tests
by Self-Identified Ethnic Groups,
April-July 1987, Type I States

Test[a]	Self-Identified Group: Black N	Black %	Hispanic N	Hispanic %	Other N	Other %	Unknown N	Unknown %	White N	White %	Total N	Total %
EES	147	58.5	88	92.0	323	87.6	177	79.1	3343	96.4	4078	93.5
ECE	48	56.3	3	100.0	10	90.0	39	76.9	550	97.1	650	92.8
BGS	18	55.6	13	69.2	25	96.0	30	93.3	478	93.3	564	91.7
ELL	23	60.9	3	100.0	36	80.6	36	86.1	594	95.3	692	92.6
IAE	5	40.0	--	--	6	83.3	5	80.0	81	98.8	97	93.8
MAT	31	45.2	14	42.9	33	90.9	26	76.9	585	87.4	689	84.3
CPS	7	28.6	5	40.0	14	64.3	7	57.1	152	77.6	185	73.0
SS	42	47.6	3	100.0	38	78.9	37	73.0	458	92.6	578	87.2
PE	34	61.8	1	100.0	17	88.2	20	65.0	359	97.5	431	92.8
BE	19	84.2	5	80.0	13	84.6	8	75.0	162	96.9	207	93.7
ME	24	50.0	--	--	14	100.0	5	80.0	307	96.7	350	93.4
HEE	7	42.9	2	50.0	6	83.3	8	100.0	140	98.6	163	95.1
AE	7	57.1	--	--	3	66.7	12	83.3	140	97.9	162	94.4
FR	4	50.0	--	--	1	0.0	9	100.0	70	91.4	84	89 3
GER	--	--	--	--	1	100.0	1	100.0	16	62.5	18	66.7
SPA	1	100.0	32	96.9	1	100.0	11	90.9	87	85.1	132	88.6
ITR	--	--	--	--	--	--	--	--	5	100.0	5	100.0
SC	3	66.7	--	--	1	0.0	2	50.0	31	100.0	37	91.9
RS	1	0.0	1	100.0	2	100.0	3	100.0	20	100.0	27	96.3
LMS	1	0.0	--	--	--	--	5	80.0	52	98.1	58	94.8
EMR	18	44.4	--	--	1	100.0	10	70.0	129	95.3	158	88.0
SLP	34	52.9	16	68.8	21	85.7	49	69.4	940	84.5	1060	82.5
AUD	2	100.0	3	66.7	13	92.3	11	81.8	202	83.3	232	83.6
SE	25	52.0	2	100.0	20	95.0	21	81.0	236	95.3	304	90.8
EAS	10	50.0	24	95.8	9	100.0	3	66.7	117	93.2	163	90.8
GC	5	80.0	7	57.1	16	93.8	3	100.0	70	95.7	101	92.1
Total	516	55.4	222	84.2	624	87.2	538	79.0	9325	93.5	11225	90.5

[a]See Appendix B.

Table 16b

Passing Rates on Specialty Area Tests
by Self-Identified Ethnic Groups,
April-July 1987, Type IIa States

	Self-Identified Group											
	Black		Hispanic		Other		Unknown		White		Total	
Test	N	%	N	%	N	%	N	%	N	%	N	%
BGS	8	25.0	17	23.5	15	33.3	21	71.4	298	73.2	359	68.8
ELL	15	46.7	11	72.7	22	68.2	34	73.5	453	78.8	535	77.0
IAE	2	0.0	1	100.0	1	100.0	1	100.0	22	90.9	27	85.2
MAT	10	30.0	16	43.8	33	54.6	37	56.8	424	59.0	520	57.5
CPS	2	0.0	4	50.0	7	57.1	16	62.5	129	65.1	158	63.3
SS	10	20.0	23	47.8	25	56.0	36	77.8	460	74.8	554	72.0
PE	8	50.0	5	40.0	6	66.7	8	100.0	152	79.6	179	83.2
BE	10	30.0	6	16.7	2	50.0	8	75.0	101	77.2	127	70.1
ME	4	75.0	3	100.0	3	100.0	11	81.8	84	84.5	105	84.8
HEE	2	0.0	1	0.0	--	--	3	33.3	53	83.0	59	76.3
AE	--	--	5	60.0	3	66.7	11	90.9	102	85.3	121	84.3
FR	4	100.0	1	100.0	2	50.0	4	100.0	48	87.5	59	88.1
GER	--	--	--	--	--	--	--	--	20	80.0	20	80.0
SPA	2	50.0	20	60.0	1	100.0	7	57.1	51	82.4	81	74.1
ITR	6	16.7	--	--	3	66.7	5	60.0	89	70.8	103	67.0
SC	--	--	1	1.8	--	--	--	--	13	92.3	14	92.9
RS	--	--	--	--	--	--	--	--	3	66.7	3	66.7
Total	83	36.1	114	49.1	123	57.7	202	71.8	2502	74.0	3024	71.2

Table 16c

Passing Rates on Specialty Area Tests
by Self-Identified Ethnic Groups,
April-July 1987, Type IIb States

	Self-Identified Group											
	Black		Hispanic		Other		Unknown		White		Total	
Test	N	%	N	%	N	%	N	%	N	%	N	%
EES	33	57.6	--	--	6	100.0	16	87.5	373	96.3	428	93.0
ECE	11	27.3	--	--	4	75.0	8	87.5	169	97.0	192	92.2
BGS	8	87.5	1	100.0	2	50.0	4	100.0	131	83.2	146	83.6
ELL	7	71.4	1	100.0	--	--	6	100.0	130	94.6	144	93.8
IAE	--	--	--	--	--	--	--	--	12	91.7	12	91.7
MAT	7	14.3	1	100.0	2	100.0	4	75.0	115	87.8	129	83.7
CPS	2	50.0	--	--	--	--	3	66.7	38	81.6	43	79.1
SS	9	55.6	--	--	1	100.0	8	37.5	115	88.7	133	83.5
PE	14	57.1	--	--	3	100.0	10	80.0	131	93.1	158	89.2
BE	4	25.0	--	--	--	--	2	100.0	66	97.0	72	93.1
ME	3	33.3	--	--	--	--	1	100.0	75	88.0	79	86.1
HEE	4	75.0	--	--	3	66.7	1	100.0	33	100.0	41	95.1
AE	1	100.0	--	--	--	--	3	100.0	42	97.6	46	97.8
FR	--	--	1	100.0	--	--	--	--	7	57.1	8	62.5
GER	--	--	--	--	--	--	--	--	--	--	--	--
SPA	1	0.0	--	--	--	--	1	100.0	10	60.0	12	58.3
ITR	--	--	--	--	1	100.0	3	66.7	31	90.3	35	88.6
SC	--	--	--	--	--	--	--	--	15	80.0	15	80.0
RC	2	50.0	--	--	--	--	--	--	30	93.3	32	90.6
LMS	1	0.0	--	--	1	100.0	1	100.0	32	100.0	35	97.1
EMR	--	--	--	--	--	--	--	--	--	--	--	--
SLP	1	0.0	--	--	--	--	4	50.0	26	84.6	31	77.4
AUD	--	--	--	--	--	--	--	--	--	--	--	--
SE	--	--	--	--	--	--	--	--	--	--	--	--
EAS	13	69.2	--	--	2	100.0	7	71.4	123	95.1	145	91.7
GC	4	50.0	--	--	--	--	4	50.0	75	92.0	83	88.0
Total	125	53.6	4	100.0	25	88.0	86	77.9	1779	92.4	2019	89.4

Table 16d

Passing Rates on Specialty Area Tests
by Self-Identified Ethnic Groups,
April-July 1987, Type III States

	Self-Identified Group											
	Black		Hispanic		Other		Unknown		White		Total	
Test	N	%	N	%	N	%	N	%	N	%	N	%
EES	59	50.9	1	0.0	4	75.0	47	51.1	397	93.2	508	84.1
ECE	18	27.8	--	--	--	--	15	20.0	151	92.7	184	80.4
BGS	9	0.0	1	100.0	1	100.0	9	33.3	102	68.6	122	61.5
ELL	8	50.0	--	--	--	--	5	60.0	70	91.4	83	85.5
IAE	--	--	--	--	1	100.0	--	--	9	88.9	10	90.0
MAT	23	26.1	1	100.0	--	--	10	50.0	96	69.8	130	60.8
CPS	4	0.0	--	--	2	100.0	4	25.0	28	71.4	38	60.5
SS	19	10.5	1	100.0	1	0.0	17	29.4	96	70.8	134	56.7
PE	8	12.5	1	0.0	1	0.0	3	0.0	51	76.5	64	62.5
BE	9	22.2	--	--	--	--	6	50.0	15	86.7	30	60.0
ME	3	66.7	--	--	--	--	2	50.0	41	92.7	46	87.0
HEE	1	100.0	--	--	--	--	--	--	12	100.0	13	100.0
AE	2	100.0	--	--	--	--	3	66.7	23	87.0	28	85.7
FR	2	0.0	--	--	1	100.0	--	--	13	30.8	16	31.3
GER	--	--	--	--	--	--	--	--	1	0.0	1	0.0
SPA	--	--	3	100.0	--	--	--	--	15	46.7	18	55.6
ITR	4	50.0	--	--	--	--	1	100.0	22	100.0	27	92.6
SC	--	--	--	--	--	--	--	--	3	100.0	3	100.0
RS	--	--	--	--	--	--	--	--	5	100.0	5	100.0
LMS	5	40.0	--	--	--	--	2	50.0	24	91.7	31	80.6
EMR	12	16.7	1	100.0	--	--	5	80.0	70	75.7	88	68.2
SLP	1	100.0	--	--	1	0.0	--	--	4	75.0	6	66.7
AUD	--	--	--	--	--	--	--	--	--	--	--	--
SE	--	--	--	--	--	--	2	100.0	14	92.9	16	93.8
EAS	16	43.8	--	--	3	100.0	5	60.0	86	90.7	110	82.7
GC	10	30.0	--	--	3	66.7	3	66.7	55	90.9	71	80.3
Total	213	33.8	9	77.8	18	72.2	139	45.3	1403	84.7	1752	75.4

required that match in varying degrees to available teacher education curricula, and at the examinee level, where people of different skills are self-selected for the different tests based on preparation, available job opportunities, and so forth.

Improvements in Black/White Passing Ratios

Table 17 shows a comparison of passing rate ratios for Black examinees to White examinees from 1981-1984 (taken from Goertz & Pitcher, 1985) and the April and July 1987 administrations of the Specialty Area tests and March and June 1987 administrations of the Core Battery.[1] The three cutoff scores applied to the data represent the low, median, and high standards used by states when the Goertz and Pitcher study was completed in 1984.

On the whole, the results show considerable improvement of the Black to White passing rate ratios. Among the 14 Specialty Area tests with sufficient volume for comparison of "low" standards, the passing rate ratio improved for 12; it also improved for all 14 for which the median standard was applied and 13 of the 14 for which the high standard was applied.

Data from the Core Battery tests show considerable improvement on all three tests. It must be cautioned that the 1981-84 data included examinees who did not list score recipients or who had scores sent to themselves as the first recipients. The current data do not.

---

[1]The Core Battery and Specialty Area files were not merged for these analyses. The most recent test score for each test in the file was used.

Table 17

Improvements in Passing Rate Ratios of Self-Identified Black Examinees to Self-Identified White Examinees, 1981-84 to 1987, Using Low, Median, and High Cutoff Scores Used by States in October 1984[a]

	1981-84[b] State Cutoff Score			1987			Difference		
Test	Low	Median	High	Low	Median	High	Low	Median	High
Specialty Areas									
EES	.548	.385	.157	.745	.589	.292	.197	.204	.135
ECE	.634	.501	.385	.695	.558	.427	.061	.057	.042
BGS	.800	.556	.281	.937	.722	.296	.137	.166	-.015
ELL	.658	.418	.328	.824	.690	.626	.166	.272	.298
MAT	.424	.275	.126	.555	.420	.293	.131	.145	.167
CPS	.485	.113	.041	.351	.251	.110	-.134	.138	.069
SS	.533	.363	.233	.685	.482	.310	.152	.119	.077
PE	.727	.403	.211	.849	.627	.451	.122	.224	.240
BE	.816	.493	.205	.931	.594	.355	.115	.101	.150
ME	.622	.497	.364	.657	.549	.575	.035	.052	.211
HEE	.637	.511	.245	.857	.571	.312	.220	.060	.067
AE	--	.371	--	.835	.835	.835	--	.464	--
EMR	.526	.467	.233	.526	.463	.230	.000	-.004	-.003
EAS	.835	.659	.447	.926	.726	.504	.091	.067	.057
ITR	.392	--	.256	.805	1.000	.705	.413	--	.449
Core Battery									
CS	.704	.511	.349	.816	.627	.482	.112	.116	.133
GK	.577	.415	.238	.777	.624	.376	.200	.209	.138
PK	.828	.553	.409	.918	.720	.612	.090	.167	.203

[a]For tests having ten or more self-identified Black examinees in 1987.

[b]Taken from Goertz and Pitcher (1985)

Discussion

Overall Passing Rates

For the total examinee sample, the passing rates on all required NTE tests are very high. These are 87.1 percent for Type I states, 74.3 percent in Type IIa states, 88.0 percent in Type IIb states, 75.4 percent in Type III states, 84.5 percent in Type IVa states, and 96.5 percent in the Type IVb state. However, the rates for Black examinees, in particular, are considerably lower.

Relationship of Passing Scores to Passing Rate Ratios

An examination of the Black/White ratios of passing rates shows that these ratios may be sensitive to the interaction of the type of test requirements, passing scores, and the particular tests required. For example, in Type IVa states, which are characterized by high General Knowledge cutoff scores, the ratio of Black to White passing rates on General Knowledge is only .556. For Professional Knowledge, the ratio is much higher (.748). The Professional Knowledge cutoff scores in Type IVa states are relatively lower than are the General Knowledge cutoff scores (see Table 18).

It might seem, on the surface, that lower cutoff scores are related to high Black/White passing ratios. This conclusion is not entirely accurate. A comparison between Type I and Type IVa states' Professional Knowledge passing rates illustrates this point. The Black/White passing ratio is higher for Type IVa states than it is for Type I states, even though the passing scores are higher in Type IVa states.

Table 18

Relative Difficulty of Passing Scores on Core Battery Tests and Passing Ratios of Self-Identified Black Examinees to Self-Identified White Examinees, Type I and Type IVa States[a]

	Type I States			Type IVa States		
Test	Mean Cutoff	Percentile[b]	B/W Passing Ratio	Mean Cutoff	Percentile[b]	B/W Passing Ratio
CS	646.0	14	.605	651.7	25	.627
GK	641.8	12	.632	647.3	21	.556
PK	642.2	11	.634	647.3	18	.748

[a]These states require all three Core Battery tests.

[b]This measure of the relative difficulty of attaining the passing score represents the percentage of seniors and bachelors who scored lower than this score, October 1984-June 1987.

Contribution of Specific Tests to Passing Rate Ratio

In Type I states, the Black to White passing ratios are more similar for all the required NTE tests, ranging from .597 for the Specialty Area tests to .634 for Professional Knowledge. Yet, the overall passing rate ratio is .379, demonstrating a more uniform contribution of each NTE test requirement to the passing rate differential. This ratio (.379) compares unfavorably with that of Type IIa (.651), Type IIB (.791), Type III (.399), Type IVa (.502), and Type IVb (.826) states.

Several factors may account for the Type I states' outcomes. Perhaps differences in educational opportunities among groups are found evenly in Type I states from elementary school, where one acquires communication skills and general knowledge, through undergraduate and graduate school education, where one acquires professional and specialty knowledge. However, in Type IVa states, which require only the Core Battery tests, more equitable educational opportunities may exist in higher education than in elementary school. This would account for the higher Black/White passing rate ratio on the Test of Professional Knowledge, which measures skills acquired in teacher education. This hypothesis assumes examinees send their scores to states where they are educated.

Alternately, perhaps the distributions of scores on some tests make these tests more sensitive to differences in cutoff scores than others, in terms of different impacts on populations. This question merits continued research. DeMauro (1986) (see Appendix B) has shown how the effect of changing cutoff scores on the Black/White passing ratios is related to score distribution.

It is also possible that the very existence of requirements affects differential impact. In Type IVa states, the phi coefficients between Professional Knowledge and General Knowledge and between Professional Knowledge and Communication Skills are higher than they are in Type I states. Perhaps the absence of a Specialty Area test requirement is related to greater attention to the more generalized skills in teacher education that influence performance on all three Core Battery tests. In Type I states, the Specialty Area requirement may focus greater attention on specific skills that are required by Specialty Area tests but not by the Core Battery tests.

Ethnicity

Finally, one cannot overlook the inexact assignment of examinees to ethnic groups. The unidentified group is large enough to considerably change the findings about passing rates for various ethnic groups. Moreover, the changes in ethnic identification within examinees (that is, the small tendency for individuals to change their ethnic identification from one test administration to the next) also affect our current statements about ethnic group performance. As mentioned earlier, the observed performance differences among ethnic groups are highly sensitive to factors that differentially attract and/or screen members of the various groups to the examinee pool.

The Future

All these speculations are worthy of future research and are undergoing considerable current examination. As they are considered, we

must not exaggerate our ability to draw definitive conclusions from the current findings. The following (at least) must be considered:

1. Differential attraction of different groups to teaching
2. Differential focus of different states on the various knowledge, skills, and abilities measured by NTE tests
3. Differential admissions requirements to education programs, related to NTE and other test requirements
4. Differential opportunity to acquire basic skills reflected even in nonbasic skills tests in the ability to interpret test questions and to acquire the required skills
5. Differential attraction to elective courses

However, the current analyses do provide some means for inference about the relationships among required NTE tests and the performance of populations seeking to have their scores reviewed by teacher certification agencies.

References

Anrig, G. R., Goertz, M. E., and McNeil, R. C. (1986) Teacher competency testing: Realities of supply and demand in this period of educational reform. The Journal of Negro Education, 55(3), pg. 316-325.

Baratz, J. C. (1986) Black Participation in the Teacher Pod. New York: Carnegie Forum on Education and the Economy, Task Force on Teaching as a Profession.

DeMauro, G.E. (1986) A model to discuss impact on a group of reducing cutoff scores. Princeton, NJ: Educational Testing Service. Unpublished internal document.

Goertz, P., and Pitcher, B. (1985) The impact of NTE use by states on teacher selection (RR-85-1). Princeton, NJ: Educational Testing Service.

Holland, P. W., and Thayer, D. T. (1986) Differential item performance and the Mantel-Haenszel statistic. Paper presented at the annual meeting of the American Educational Research Association, San Francisco, CA.

Appendix A
A Model to Discuss Impact on a Group of Reducing Cutoff Scores

Gerald E. DeMauro

This paper discusses considerations for reducing (or raising) cutoff scores. These considerations are independent of the probabilities of passing examinees with true scores lower than the cutoff or failing examinees with true scores higher than the cutoff.

Model

Given the following frequencies (represented by A, B, and C)

	Focal Group Members	Reference group (All Others)
Below Reduced Cut	A_F	A_R
Between Reduced Cut and old Cut	B_F	B_R
At or Above Old Cut	C_F	C_R

Then lowering the cutoff scores:

a. Lowers the percentage of examinees who pass who are members of the focal group when

$$B_F < \frac{B_R C_F}{C_R}$$

b. Raises the percentage of examinees who pass who are members of the focal group when

$$B_F > \frac{B_R C_F}{C_R}$$

c. Lowers the percentage of failures who are members of the focal group when

$$B_F > \frac{A_F B_R}{A_R}$$

d. Raises the percentage of failures who are members of the focal group when

$$B_F < \frac{A_F B_R}{A_R}$$

Therefore, the following hold:

1. When $\frac{A_F B_R}{A_R} < B_F < \frac{B_R C_F}{C_R}$

   then lowering the cutoff both decreases the percentage of passers who are members of the focal group and decreases the percentage of failures who are members of the focal group;

2. When both $\frac{B_R C_F}{C_R}$ and $\frac{A_F B_R}{A_R} < B_F$

   then lowering the cutoff both increases the percentage of passers who are members of the focal group and decreases the percentage of failures who are members of the focal group;

3. When both $\frac{A_F B_R}{A_R}$ and $\frac{B_R C_F}{C_R} > B_F$

   then lowering the cutoff both decreases the percentage of passers who are members of the focal group and increases the percentage of failures who are members of the focal group;

4. When $\frac{B_R C_F}{C_R} < B_F < \frac{A_F B_R}{A_R}$

   then lowering the cutoff both increases the percentage of passers who are members of the focal group and increases the percentage of failures who are members of the focal group.

Application to Norms (Interpretive Leaflet) Data, 1983-1986

NTE Programs provides user distributions for first time examinees aggregated over three years of test administrations. Each year, the distributions of the previous three years are reported in NTE score interpretive leaflets. An analysis of the effect of reducing passing scores on seniors and bachelors who took the Core Battery Tests of Communication Skills, General Knowledge, and Professional Knowledge follows.

In this analysis, the focal group is self-identified Black examinees, and the reference group is all other examinees.

From 1983 through 1986, 92,499 total and 8,215 self-identified Black senior and bachelor degree examinees took the Test of Communication Skills. Similarly, 106,672 total and 8,984 self-identified Black senior and bachelor degree examinees took the Test of General Knowledge, and 104,732 total and 9,404 self-identified Black senior and bachelor degree examinees took the Test of Professional Knowledge (Table 1).

Table 1

Number of Senior and Bachelor Examinees
Who Took Core Battery Tests for the
First Time, 1983-1986, by Self-Identified
Ethnic Groups

Test		Black Examinees	White Examinees	Others	Total
Communication Skills	N	8,215	74,856	9,428	92,499
	%	8.9	80.9	10.2	100.0
General Knowledge	N	8,984	85,996	11,692	106,672
	%	8.4	80.6	11.0	100.0
Professional Knowledge	N	9,404	85,333	9,995	104,732
	%	9.0	81.5	9.5	100.0

Table 2 shows the increase in the proportion of self-identified Black examinees among those who would pass and fail each test if the cutoff score were dropped by one standard error of measurement. The scores shown are the range of operational cutoff scores. In all cases,

$$\frac{B_R C_F}{C_R} < BF < \frac{A_F B_R}{A_R}$$

(Table 3). Therefore, the representations of self-identified Black examinees among both passers and failures increases throughout the ranges of currently-used cutoff scores.

Acceleration

Figures 1-6 show that the increases in representation of self-identified Black examinees among passers and failures are not monotonic functions. Obviously, much consideration about any projected effect of reducing the cutoff scores must be tempered by where in the range the current cutoff score is. That is, the utility of changing a cutoff score must be considered in terms of impact, which is determined in part by the score.

Policy Implications

The percentage of examinees between the higher and lower cutoff scores who are focal group members is critical. If it is lower than the focal group representation among those who would pass the test at the unmodified cutoff score, then lowering the cutoff score lowers the representation among passers. If it is lower than the focal group representation among those would fail the test at the lowered cutoff score, then lowering the cutoff score raises the group's representation among failures. Both of these are negative outcomes. If this probability is a guiding concern for policy makers, then the cutoff should not be lowered when

$$B_F/B_R < C_F/C_R$$

Conversely, if policy makers are more concerned with the representation of group members among failures, the cutoff should not be lowered when $B_F/B_R < A_F/A_R$ (this concern is perhaps best suited to certification use of the tests).

Clearly, the distribution of scores for various groups and the purposes of testing must be considered in evaluating the impact of lowering (or raising) cutoff scores.

Table 2

Changes in Representation of Self-Identified Black Examinees among Those Who Pass and Fail Core Battery Tests, 1983-1986, by Passing Score

Passing Score	Communication Skills: Change in Proportion of Black Examinees Among those who: Pass	Communication Skills: Fail	General Knowledge: Change in Proportion of Black Examinees Among those who: Pass	General Knowledge: Fail	Professional Knowledge: Change in Proportion of Black Examinees Among those who: Pass	Professional Knowledge: Fail
634	0.0069266	0.0331222	0.0090870	0.0523650	0.0079636	0.0405837
635	0.0071264	0.0396216	0.0101676	0.0564228	0.0081806	0.0467479
636	0.0071713	0.0491599	0.0112148	0.0584741	0.0080885	0.0515615
637	0.0073022	0.0569577	0.0106305	0.0593378	0.0088756	0.0663266
638	0.0079855	0.0560314	0.0112521	0.0726865	0.0087563	0.0693406
639	0.0081150	0.0589691	0.0108672	0.0747946	0.0087733	0.0698957
640	0.0081272	0.0622305	0.0105963	0.0762485	0.0088802	0.0760929
641	0.0089588	0.0650468	0.0107671	0.0778283	0.0085323	0.0642279
642	0.0084028	0.0597441	0.0104888	0.0733720	0.0091771	0.0671284
643	0.0084197	0.0625388	0.0101074	0.0745708	0.0092690	0.0662510
644	0.0086097	0.0598883	0.0097698	0.0751444	0.0093525	0.0596363
645	0.0085947	0.0585504	0.0089543	0.0711637	0.0090567	0.0618515
646	0.0083676	0.0630813	0.0091392	0.0698166	0.0091477	0.0608207
647	0.0086121	0.0594670	0.0087447	0.0638463	0.0094480	0.0597696
648	0.0089099	0.0550833	0.0083813	0.0616293	0.0093314	0.0591160
649	0.0085148	0.0535212	0.0080084	0.0596876	0.0092973	0.0576389
650	0.0088241	0.0491850	0.0067146	0.0541149	0.0090412	0.0615984
651	0.0087866	0.0504893	0.0066910	0.0536321	0.0085339	0.0590415
652	0.0081057	0.0522773	0.0062992	0.0474474	0.0083811	0.0579092
653	0.0078853	0.0485878	0.0060665	0.0464557	0.0080489	0.0559337
654	0.0076133	0.0490287	0.0059739	0.0435222	0.0070031	0.0462782
655	0.0073410	0.0445348	0.0050304	0.0377241	0.0066754	0.0440722
656	0.0074049	0.0424498	0.0051310	0.0379863	0.0061845	0.0404495
657	0.0068556	0.0421155	0.0046413	0.0333111	0.0058023	0.0385710
658	0.0067561	0.0391488	0.0047598	0.0325141	0.0056551	0.0370487
659	0.0062915	0.0381004	0.0047123	0.0301832	0.0057569	0.0350805
660	0.0056503	0.0363666	0.0038471	0.0270380	0.0053943	0.0331378
661	0.0054411	0.0346265	0.0035731	0.0264678	0.0052224	0.0308488

Table 3

Determining Ratios[1] of Representativeness of Self-Identified Black Senior and Bachelor Examinees on Core Battery Tests, 1983-1986

Cutoff Score	Communication Skills			General Knowledge			Professional Knowledge		
	$\frac{B_R C_F}{C_R}$	$\frac{A_F B_R}{A_R}$	B_F	$\frac{B_R C_F}{C_R}$	$\frac{A_F B_R}{A_R}$	B_F	$\frac{B_R C_F}{C_R}$	$\frac{A_F B_R}{A_R}$	B_F
634	66.763	1018.38	739	90.945	1747.39	1094	84.062	1431.47	951
635	73.373	1133.10	761	104.938	2018.80	1218	94.002	1585.27	979
636	82.553	1285.70	770	117.354	2252.88	1336	101.536	1700.36	970
637	92.126	1443.97	788	120.356	2282.51	1262	126.661	2143.26	1072
638	103.388	1570.75	858	142.136	2743.28	1340	135.314	2271.45	1060
639	111.914	1686.89	873	150.202	2866.94	1293	145.304	2368.48	1064
640	123.262	1810.96	879	157.322	2986.98	1259	164.684	2633.57	1086
641	139.420	2036.90	965	168.166	3194.96	1273	157.704	2402.03	1031
642	137.400	1943.08	903	171.712	3164.97	1232	175.474	2669.94	1104
643	149.519	2082.91	909	182.586	3308.57	1189	185.738	2757.54	1113
644	157.552	2127.79	925	191.187	3434.00	1150	186.799	2672.93	1109
645	164.006	2189.90	919	189.027	3341.96	1052	196.700	2812.71	1078
646	180.264	2378.64	907	195.817	3484.21	1060	204.998	2925.96	1079
647	184.822	2398.55	922	192.349	3341.79	1002	214.722	3043.68	1103
648	185.569	2389.50	936	195.681	3354.69	956	221.737	3128.68	1084
649	187.965	2399.69	892	196.644	3368.71	908	226.405	3186.25	1070
650	189.389	2371.80	906	185.743	3101.78	766	249.953	3545.93	1050
651	200.092	2519.20	900	191.512	3238.92	755	250.305	3520.75	988
652	209.143	2633.73	842	178.200	2978.34	694	255.978	3612.67	963
653	203.294	3558.30	805	180.498	3043.29	663	256.047	3624.46	918
654	212.367	2670.34	780	175.175	2972.10	637	230.025	3125.48	782
655	202.408	2542.01	734	159.438	2638.86	533	228.116	3093.42	738
656	203.217	2555.39	724	161.184	2774.90	531	217.967	2945.19	673
657	204.793	2590.94	674	146.741	2515.04	467	214.454	2908.83	626
658	199.780	2530.26	646	142.829	2566.48	459	212.846	2918.75	598
659	197.226	2531.86	599	134.958	2468.65	436	205.639	2898.32	581
660	195.670	2492.04	542	124.239	2244.14	358	198.944	2828.11	535
661	192.200	2461.93	513	123.573	2265.55	331	188.754	2731.09	498

[1] B_R = No. non-Black examinees who pass by lower cutoff score and fail by higher.

C_F = No. self-identified Black examinees who pass by higher cutoff score.

C_R = No. non-Black examinees who pass by higher cutoff score.

B_F = No. self-identified Black examinees who pass by lower cutoff score and fail by higher.

A_F = No. self-identified Black examinees who fail by lower cutoff score.

A_R = No. non-Black examinees who fail by lower cutoff score.

Validity Considerations

If the distribution of scores is considered an aggregate distribution of masters (of the tested construct) and nonmasters, then raising or dropping the cutoff score may be shown to have definable effects on the agreement of status with regard to passing the test and status as a master of the construct.

Unfortunately, valid and reliable methods for defining masters and nonmasters on constructs measured by NTE Programs Tests are not available.

Derivation

I. Failures

$$\text{Percent Group Among Failures} = \frac{A_F+B_F}{A_F+B_F+A_RB_R} \qquad (1)$$

$$\text{Reduced Score, Percent of Group Among Failures} = \frac{A_F}{A_F+A_R} \qquad (2)$$

$$\text{Difference (1 - 2):} \quad \frac{(A_F+B_F)\,(A_F+A_R) - A_F(A_F+B_F+A_R+B_R)}{(A_F+B_F+A_R+B_R)\,(A_F+A_R)} =$$

$$\frac{A_F^2+A_FA_R+A_FB_F+A_RB_F-A_F^2-A_FB_F-A_FA_R-A_FB_R}{(A_F+B_F+A_R+B_R)\,(A_F+A_R)} = \frac{A_RB_F-A_FB_R}{A_F+B_F+A_R+B_R)\;A_F+A_R)}$$

the difference is positive (higher representation at original cut score) when $A_RB_F > A_FB_R$ or $B_F > \frac{A_FB_R}{A_R}$. Therefore, the representation among failures decreases when $B_F > \frac{A_FB_R}{A_R}$

II. Passers

$$\text{Percent Group Among Passers} = \frac{C_F}{C_F+C_R} \qquad (3)$$

$$\text{Reduced Score, Percent of Group Among Passers} = \frac{B_F+C_F}{B_F+C_F+B_RC_R} \qquad (4)$$

Difference (3 - 4): $= \frac{C_F(B_F+C_F+B_RC_R) - (B_1+C_1)(C_1+C_2)}{(C_F+C_R)(B_F+C_F+B_R+C_R)} =$

$$\frac{B_FC_F+C_F^2+B_RC_F+C_FC_F - B_FC_F-B_FC_R-C_F^2-C_FC_R}{(C_F+C_R)(B_F+C_F+B_R+C_R)} = \frac{B_RC_F-B_FC_R}{(C_F+C_R)(B_F+C_F+B_RC_R)}$$

The difference is positive (higher representation at original cut score) when $B_R C_F > B_F C_R$ or $B_F B_F < \frac{B_R C_F}{C_R}$

Therefore, the representation among passers decrease when $B_F < \frac{B_R C_F}{C_R}$

Figure 1

Increases in the Representation
of Self-Identified Black Examinees
Among Examinees who Passed the
Test of Communication Skills, Reducing
the Cutoff Score by
One Standard Error of Measurement

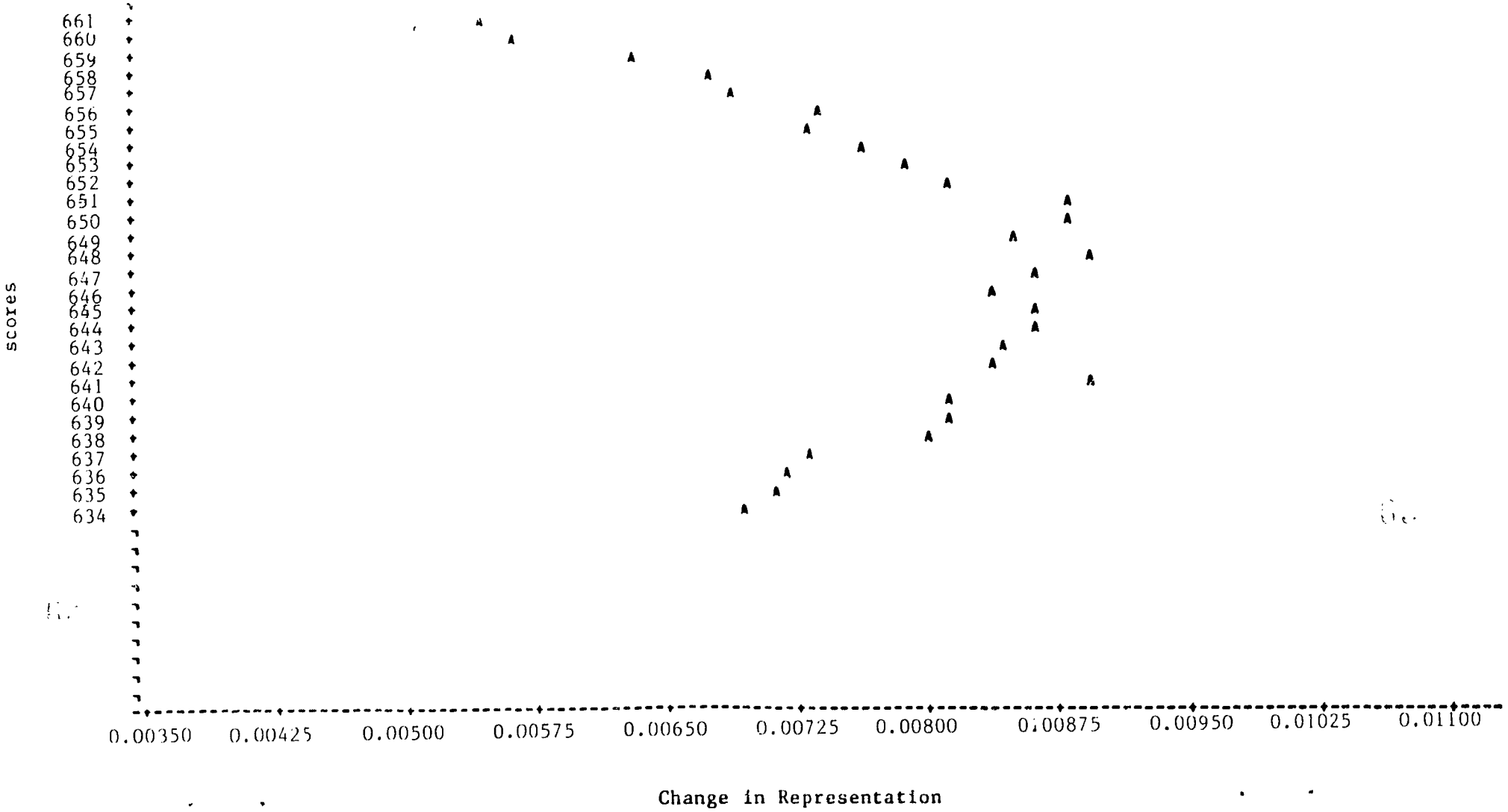


Figure 2

Increases in the Representation
of Self-Identified Black Examinees
Among Examinees who Failed the
Test of Communication Skills, Reducing
the Cutoff Score by
One Standard Error of Measurement

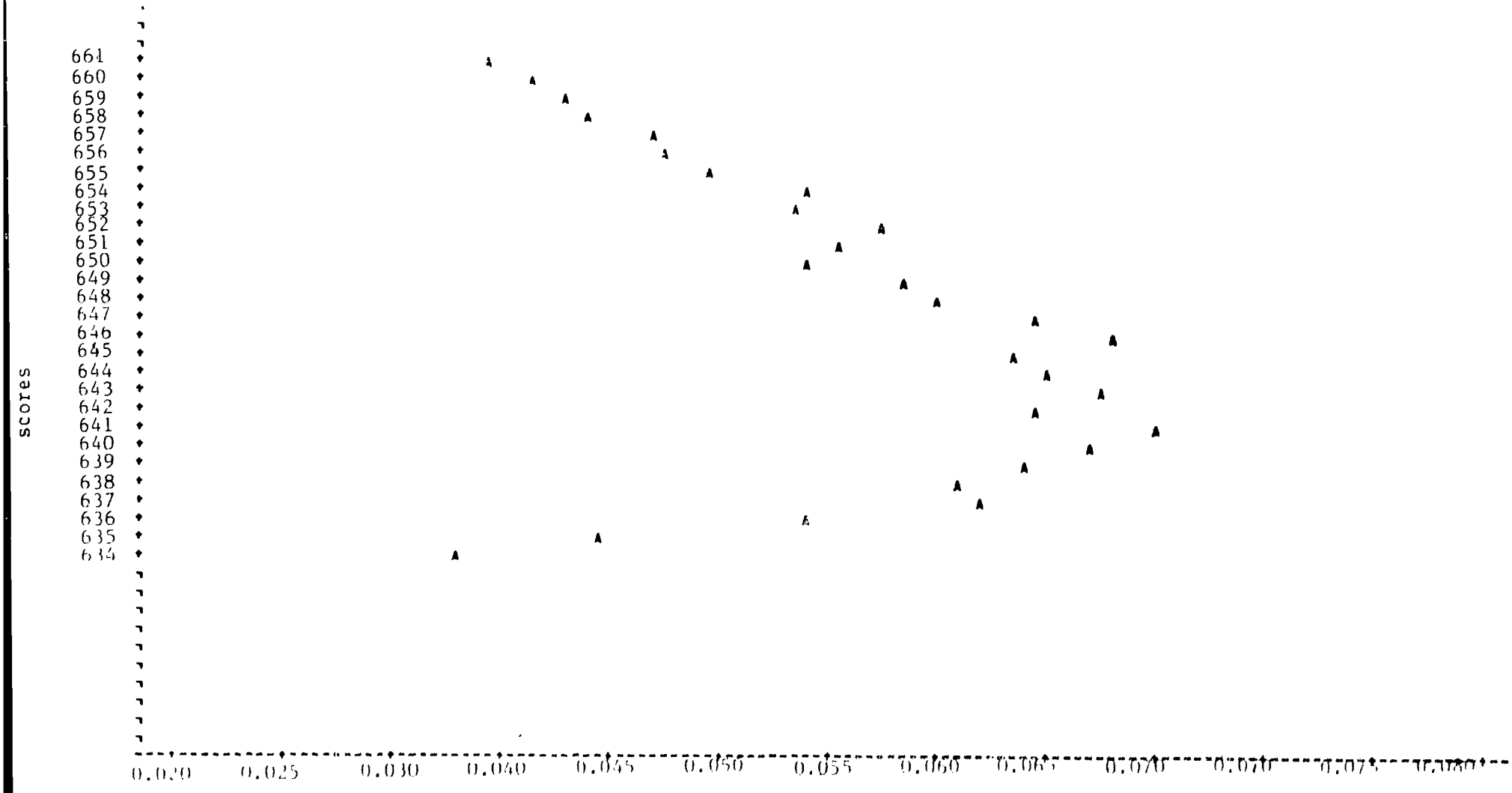
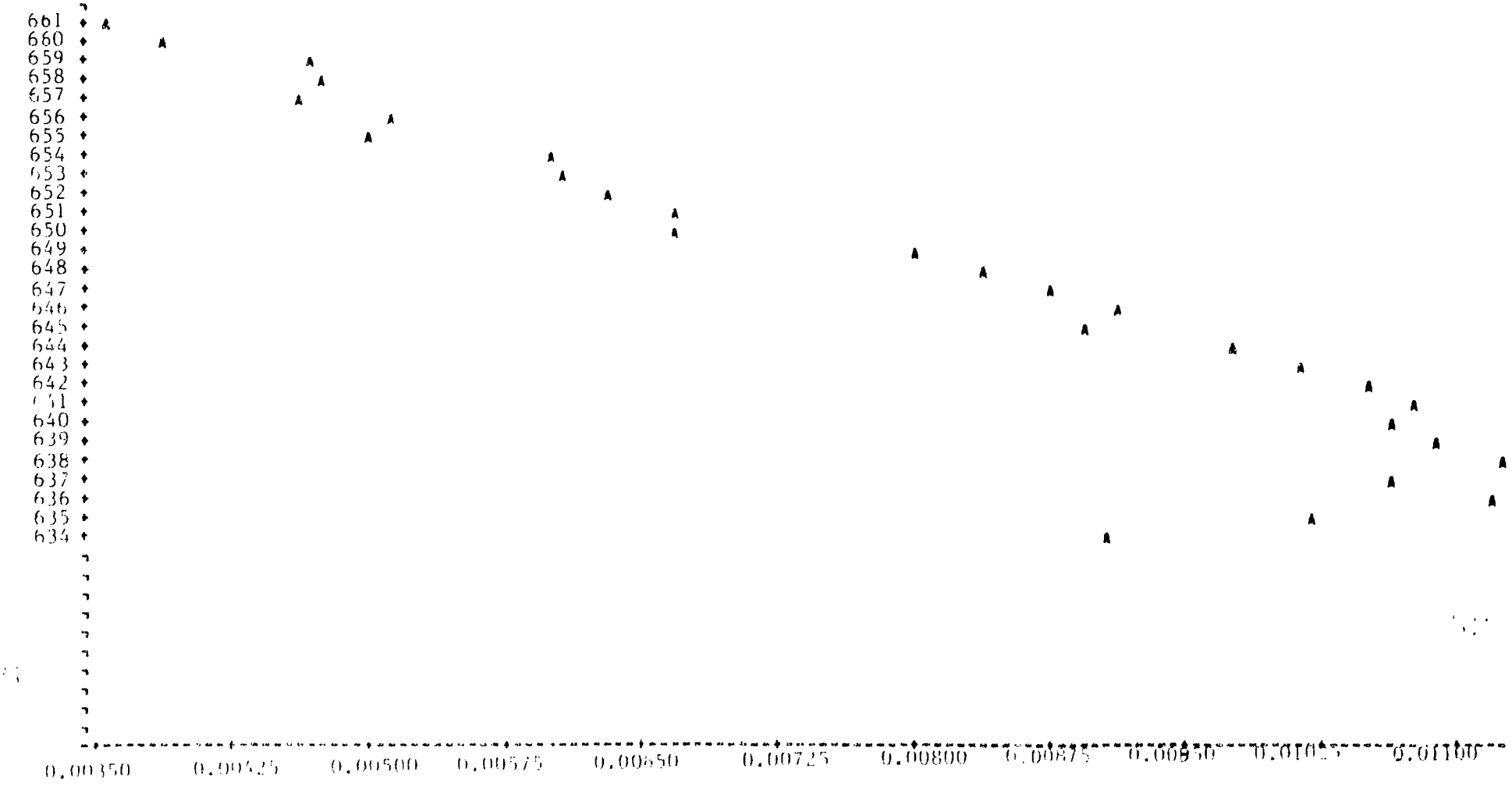


Figure 3

Increases in the Representation
of Self-Identified Black Examinees
Among Examinees who Passed the
Test of General Knowledge, Reducing
the Cutoff Score by
One Standard Error of Measurement



Change in Representation

Figure 4

Increases in the Representation of Self-Identified Black Examinees Among Examinees who Passed the Test of General Knowledge, Reducing the Cutoff Score by One Standard Error of Measurement

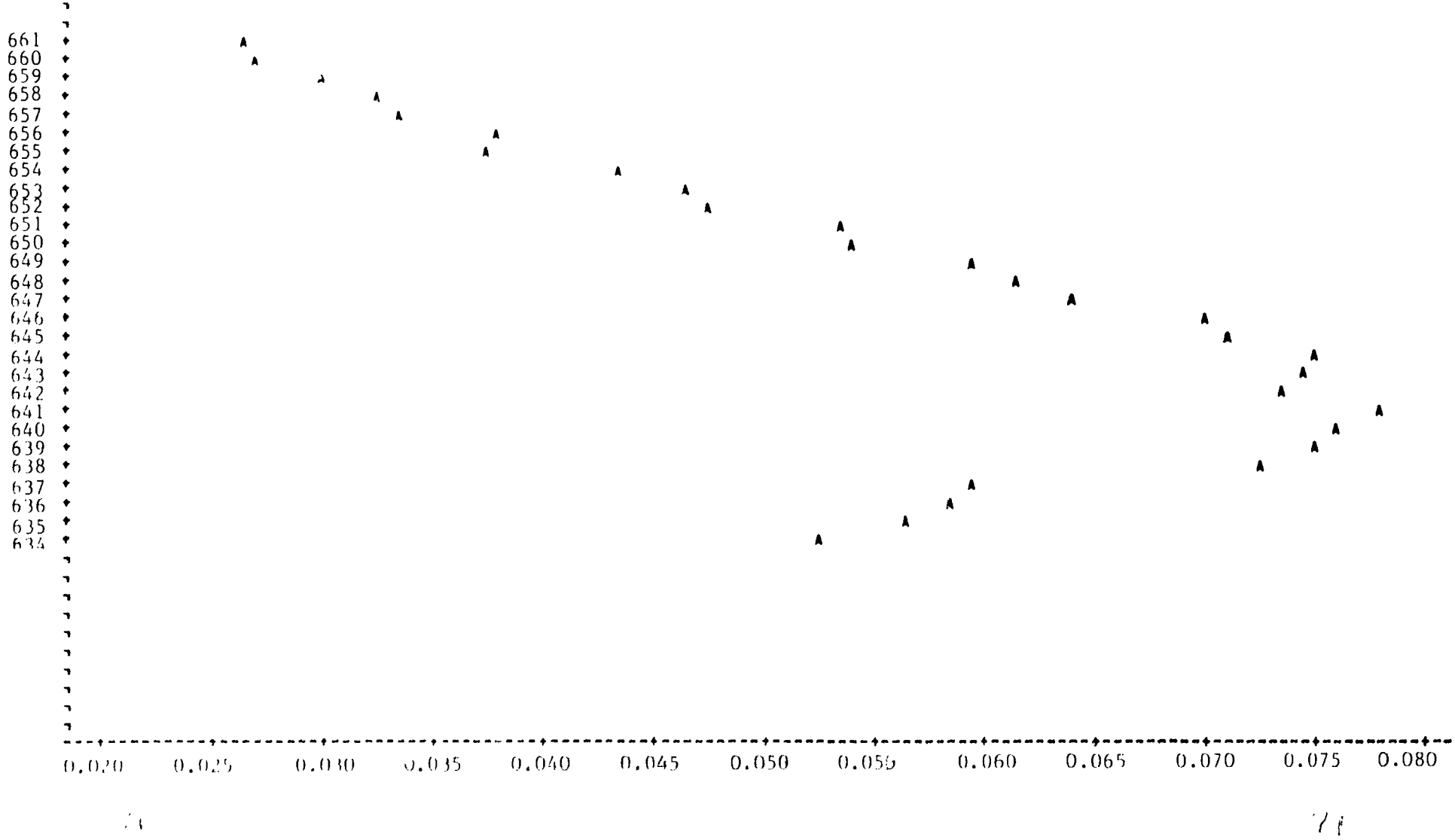


Figure 5

Increases in the Representation
of Self-Identified Black Examinees
Among Examinees who Passed the
Test of Professional Knowledge, Reducing
the Cutoff Score by
One Standard Error of Measurement

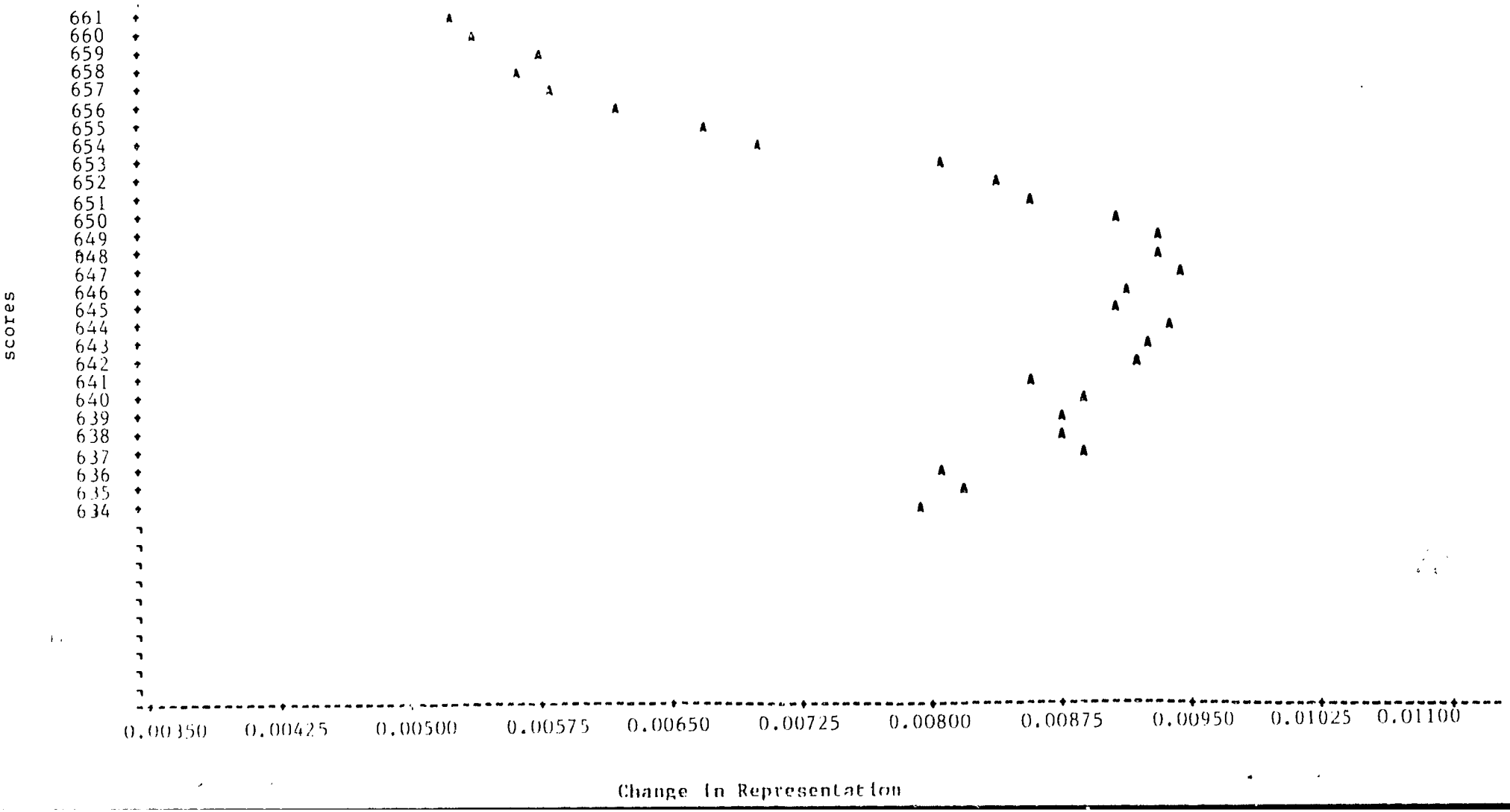
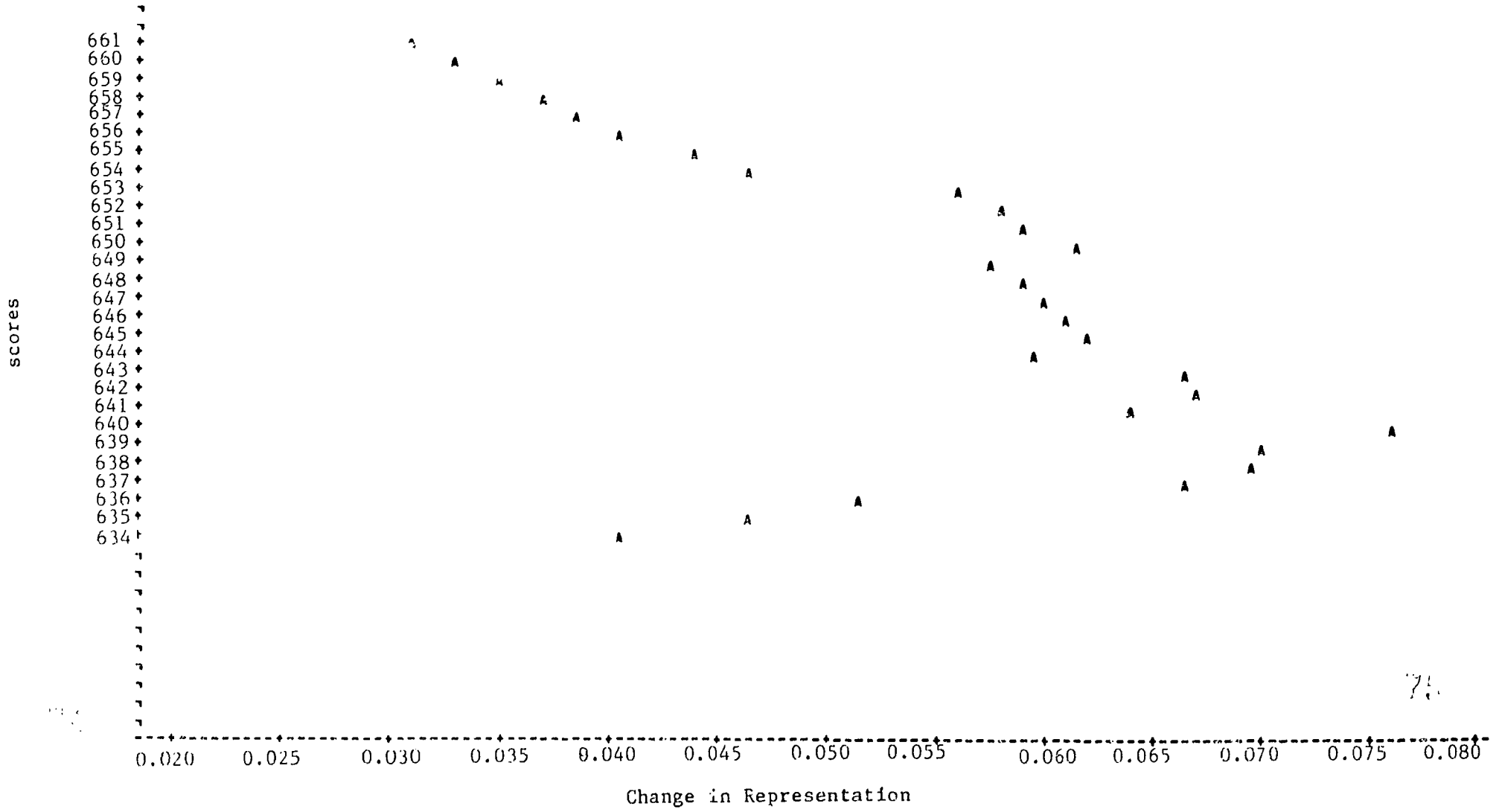


Figure 6

Increases in the Representation
of Self-Identified Black Examinees
Among Examinees who Passed the
Test of Professional Knowledge, Reducing
the Cutoff Score by
One Standard Error of Measurement



Appendix B

NTE Specialty Area Tests

Abbreviation	Name
EES	Education in the Elementary School
ECE	Early Childhood Education
BGS	Biology and General Science
ELL	English Language and Literature
IAE	Industrial Arts Education
MAT	Mathematics
CPS	Chemistry, Physics, and General Science
SS	Social Studies
PE	Physical Education
BE	Business Education
ME	Music Education
HEE	Home Economics Education
AE	Art Education
FR	French
GER	German
SPA	Spanish
ITR	Introduction to the Teaching of Reading
SC	Speech Communication
RS	Reading Specialist
EMR	Education of Mentally Retarded Students
SCP	Speech-Language Pathology
AUD	Audiology
SE	Special Education
EAS	Educational Administration and Supervision
GC	School Guidance and Counseling