

Report on the
1999-2000
Administration
of the Illinois
Consumer
Education Proficiency
Test

ILLINOIS STATE BOARD OF EDUCATION
ASSESSMENT DIVISION

School Participation in the 1999-2000 ICEPT Test Cycle¹

The Illinois Consumer Education Proficiency Test (ICEPT) was administered twice during the 1999-2000 school year: October 5-6, 1999 and January 25-26, 2000. In response to order forms sent to all Illinois public secondary schools announcing the two ICEPT test dates, a total of 31,923 test booklets, 25,990 answer sheets, and related test materials were distributed at no cost to participating schools. Although students are permitted to take the examination only once during each school year, different forms were prepared for the Fall and Winter administration dates in order to maintain the highest possible level of test security.

Table 1 summarizes school participation in the 1999-2000 test cycle.² As Table 1 shows, 187 of 654 schools (29%) tested students during both administration periods, 251 (38%) tested students during one of the two administration periods, and 53 (8%) ordered materials for one or both administration periods but did not test any students. A total of 163 schools (25%) did not order materials for either test date.

Description and Demographic Comparisons of Students Participating in Each Test Administration

Table 2 presents descriptive data for a sample of the total population of students participating in the 1999-2000 ICEPT test cycle ($n = 12,187$). The sample ($n = 6,912$)³ includes only students who

¹ This document was prepared by MetriTech, Inc., Champaign, Illinois, under contract to the Illinois State Board of Education. John C. Craig, Ph.D., Assessment Consultant, Assessment Division, directed the project during this period. April 2000.

² For convenience, all of the tables and figures are presented together following the text.

³ Because some students do not code all demographic information used in the subsequent analy-

used MetriTech-supplied answer sheets. Since the only information that all schools are required to report is the number of students tested and the number passing, it is not possible to determine how demographically representative this sample is of the total test population. However, with respect to the passing rate, it is important to note that the rate for the total 1999-2000 test population obtained from school reports is 19.0% (2,315/12,187) while the rate obtained for the sample described in this report is 16.3%.

Table 2 presents a breakdown of the ICEPT examinee population with respect to ethnicity, gender, current grade in school, and self-reported cumulative GPA. A series of analyses were conducted to compare the Fall test population with the Winter test population. The purpose in doing so was to better understand differences in the composition of the groups that might lead to different passing rates for the two test dates, 18.4% for Fall, 19.7% for the Winter. Tables 3 through 6 present a series of comparisons between the two groups. Each table is organized in the same way. The first column shows data for the Fall testing. The second column shows data for the Winter testing. Each cell in the table contains three entries. The first entry shows the number of students in that category (N), and the second entry shows the percentage of students in that category (%). The third entry shows the difference between the actual cell frequency and the cell frequency expected on the basis of the row and column totals (z_d) expressed in standard score form. This number can be interpreted as representing the cell's contribution to an overall chi-square test of independence. That is, the higher this statistic in absolute value, the greater the departure of the cell from expectation, the larger the resulting χ^2 and the higher

ses, the sample sizes vary from table to table ($n = 6,261-6,912$).

the probability that the two groups differ with respect to the classification variable.

There are statistically significant differences in the composition of the two groups with respect to ethnicity ($\chi^2 = 48.03$, $df = 5$, $p < .000$) but no differences between the two groups with respect to gender ($\chi^2 = 2.45$, $df = 1$, $p = .118$). In terms of current grade, there is a statistically significant difference in the composition of the two samples ($\chi^2 = 330.49$, $df = 3$, $p < .000$). Freshmen and sophomores are more likely to test in the Spring, and seniors are more likely to test in the Fall. There is also a statistically significant difference between the groups based on self-reported GPA ($\chi^2 = 20.26$, $df = 9$, $p = .016$).

Technical Characteristics of the Test Forms

Although two different ICEPT forms were administered during the 1999-2000 test cycle, results were pooled for purposes of analyzing student performance on ICEPT in relationship to certain demographic parameters. The two test forms had been designed to be equivalent in content and were calibrated to produce equivalent passing scores. Table 7 presents a summary of certain statistical characteristics of the two test forms used in the 1999-2000 test cycle. Students who obtained scores below the chance level were excluded from this analysis. For this reason the sample size is slightly lower than that used in other analyses reported here. As Table 7 shows, the reliabilities of the test forms used in the 1999-2000 test cycle are very high. The raw score means, standard deviations, and standard errors of measurement are very similar.

A preliminary one-way analysis of variance (ANOVA) in which raw score was the dependent variable and test form the independent variable revealed that the difference in means was statistically significant. As noted in the previous section,

there were also statistically significant differences between the Fall and Winter examinee groups with respect to some demographic characteristics. On the assumption that group differences might explain a portion of these mean differences between the two forms, a second analysis of variance was conducted in which demographic variables (grade, ethnicity, and self-reported GPA) were treated as covariates. That is, this analysis tested the difference between means for significance when the effects of these three variables were held constant for the two examinee groups. These results are reported in Table 8. As this table shows, both GPA and grade contribute significantly to explaining form differences. Although ethnicity contributes significantly as well, its role is substantially less than the other two. When grade and GPA are held constant, there is a significant reduction in form variance.

Analysis of Passing Rate

Table 9 summarizes the ICEPT passing rates by various demographic characteristics. Values in the table show the percentage of students in each category that obtained a passing score on one of the two examinations. For example, the overall passing rate for the 6,912 students on which we have data is 16.3%. The passing rate is 41.0% for Asian males, 24.7% for Asian females, and 32.9% for Asians as a group. As previously noted, these data are based only on those students who used MetriTech-supplied answer sheets.

To examine certain trends suggested by the data in Table 9, a series of analyses of variance were computed. Table 10 presents these results. As the table shows, with passing rate as the dependent variable, gender, GPA, ethnicity, and grade in school all show statistically significant effects. Gender appears to be the most important factor, and the passing rate for males is significantly

higher than for females. As would be expected, students who report having higher overall grade point averages pass at much higher rates than students who report lower overall grade point averages. For example, 40% of students who reported an overall grade point average of A+ passed the test. Only about 6% of the students who reported an overall GPA of D or lower passed the test. Students at higher grade levels pass at higher rates than students at lower grade levels. There is also a significant effect associated with ethnicity. However, the effect size for ethnicity is the smallest among the demographic variables analyzed.

Historical Analysis of Passing Rate

Since its introduction in the 1986-87 school year, the ICEPT passing rate has shifted. There are probably several reasons for these shifts. As the data in Table 11 show, there was a significant decrease in the number of students tested each year from the beginning of the program until 1993-94. Since then the number of students has remained relatively stable. Because of these large differences in the number of test takers over the years, the composition of the group applying to take the test has undoubtedly shifted during this time. In terms of overall secondary student enrollment, the actual number of students passing the test has remained relatively stable over the years, varying only between .3% and .8%.

Analysis of Student Performance by Topic Area

The specifications for the Illinois Consumer Education Proficiency Test define coverage for a set of 10 primary topic areas and 4 secondary topic areas. Each of the primary topic areas—Money Management, Credit, The Economy, The Marketplace, Saving/Investing, Insurance, Taxes, Transportation, Housing, and Food—are assessed in each new ICEPT

form by a range of 10 to 14 items. The secondary topic areas—Consumer Services, Clothing, Health Care, and Recreation—are assessed by a range of 3 to 5 items. Statistical studies of the primary topic area scales show that the scales are sufficiently reliable from form to form to permit comparisons of group performance across topic areas and across time. The secondary topic areas are not sufficiently reliable to permit such comparisons.

Because the number of items allocated to each topic area varies slightly from form to form, the number correct or raw scores are not directly comparable across areas. In 1993, a new reporting scale was developed that permits direct comparisons across areas and facilitates interpretation of group differences. On this scale, scores may range between 1 and 100. A scale score of 70 corresponds to a passing score on the test.

Table 12 shows how the 1999-2000 test population scored in each of the ten primary topic areas. The scores have been arranged from highest to lowest. For each area, the table shows the mean scale score. As Table 12 shows, student performance is highest in Area 7 (Taxes) and lowest in Area 8 (Transportation). Results of statistical tests for differences between mean scores across area are indicated by spaces between areas. For example, student performance in Area 7 (Taxes) is significantly higher than in any other area. The second highest area, Area 10 (Food), is significantly higher than the remaining eight areas. The third highest area, Area 4 (The Marketplace), is significantly higher than other areas except Area 9 (Housing) and Area 6 (Insurance). Figure 1 presents the results reported in Table 12 in graphic form for ease of interpretation.

Two other comparisons at the area level are shown in Figures 2 and 3. Figure 2 compares the performance of males and females across the ten primary topic areas. Statistical tests indicate that there

are significant gender differences in all areas except Areas 4 (The Marketplace), 6 (Insurance), 7 (Taxes), and 10 (Food). All of the statistically significant differences favor males.

Figure 3 compares student performance in each area across grades. As would be expected, performance in each area is highest for 12th-grade students and lowest for 9th-grade students. For the 1999-2000 test population, student performance improved more from 9th to 10th grade (5.8 scale score points) and 11th grade to 12th grade (4.7 scale score points) than from 10th grade to 11th grade (3.0 scale score points). This pattern matches findings from previous years as well.

One of the advantages of using the scale score system is that results can be studied across years. These results are shown in Table 13. For each topic area, the table shows scale score values for each of the past five examinee populations. Section A of the table shows results for the total population. Section B provides a breakout by gender, and Section C provides a breakout by year in school.

As Table 13 shows, the pattern of change across years differs across areas. For example, Area 5 (Saving/Investing) shows a general, but slight increase over time. A cyclical pattern is more evident for some areas (e.g., Area 4—The Marketplace, Area 3—The Economy).

As Sections B and C of Table 13 show, there are some interesting variations within various groups. For example, women have regularly scored as high or higher than men in Area 10 (Food), and differences between men and women in Area 4 (The Marketplace) are generally negligible. Area 7 (Taxes) and Area 10 (Food) generally remain among the highest areas across grade in school, and Area 1 (Money Management) is among the lowest.

Table 1
Summary of School Participation in the 1999-2000 ICEPT Test Cycle

Description	Number
Schools Testing Students During Both Administration Cycles	187
Schools Testing Students During the Fall Administration Period Only	151
Schools Testing Students During the Winter Administration Period Only	100
Schools Ordering Materials for One or Both Administration Period, but Not Testing Any Students	53
Schools That Did Not Order Materials for Either Administration Period	163

Table 2
Demographic Composition of the 1999-2000 ICEPT Examinee Population

	Frequency	Percent
Ethnicity		
Asian	155	2
Black	183	3
Hispanic	167	3
Native American	15	0
White	5967	91
Other	69	1
Gender		
Male	3225	49
Female	3406	51
Grade in School		
9	616	9
10	1540	24
11	3545	54
12	832	13
GPA (self-report)		
A +	591	9
A	1388	22
A-	965	15
B+	856	14
B	1022	16
B-	476	8
C+	414	7
C	348	6
C-	129	2
< = D	72	1

Table 3**Comparison of Students Participating in the Fall and Winter ICEPT Administration Periods on the Basis of Ethnicity**

		Fall	Winter	Total
Asian	N	53	102	155
	%	1.5	3.3	2.4
	Z _d	-3.3	3.5	
Black	N	76	107	183
	%	2.2	3.5	2.8
	Z _d	-2.2	2.4	
Hispanic	N	81	86	167
	%	2.3	2.8	2.5
	Z _d	-.9	.9	
Native American	N	12	3	15
	%	.3	.1	.2
	Z _d	1.4	-1.5	
White	N	3255	2712	5967
	%	92.9	88.9	91.0
	Z _d	1.2	-1.2	
Other	N	27	42	69
	%	.8	1.4	1.1
	Z _d	-1.6	1.7	
TOTAL	N	3504	3052	6556
	%	100	100	100

Table 4**Comparison of Students Participating in the Fall and Winter ICEPT Administration Periods on the Basis of Gender**

		Fall	Winter	Total
Male	N	1752	1473	3225
	%	49.5	47.6	48.6
	Z _d	.8	-.8	
Female	N	1785	1621	3406
	%	50.5	52.4	51.4
	Z _d	-.7	.8	
TOTAL	N	3537	3094	6631
	%	100	100	100

Table 5
Comparison of Students Participating in the Fall and Winter ICEPT Administration Periods on the Basis of Current Grade in School

		Fall	Winter	Total
9	N	242	374	616
	%	7.0	12.3	9.4
	z _d	-4.8	5.1	
10	N	708	832	1540
	%	20.3	27.3	23.6
	z _d	-3.9	4.2	
11	N	1862	1683	3545
	%	53.5	55.2	54.3
	z _d	-.6	.7	
12	N	670	162	832
	%	19.2	5.3	12.7
	z _d	10.8	-11.5	
TOTAL	N	3482	3051	6533
	%	100	100	100

Table 6**Comparison of Students Participating in the Fall and Winter ICEPT Administration Periods on the Basis of GPA (Self-Report)**

		Fall	Winter	Total
A +	N	288	303	591
	%	8.7	10.2	9.4
	Z _d	-1.3	1.4	
A	N	754	634	1388
	%	22.9	21.4	22.2
	Z _d	.9	-.9	
A-	N	490	475	965
	%	14.9	16.0	15.4
	Z _d	-.8	.8	
B +	N	423	433	856
	%	12.8	14.6	13.7
	Z _d	-1.3	1.4	
B	N	560	462	1022
	%	17.0	15.6	16.3
	Z _d	.9	-1.0	
B-	N	266	210	476
	%	8.1	7.1	7.6
	Z _d	1.0	-1.0	
C +	N	238	176	414
	%	7.2	5.9	6.6
	Z _d	1.4	-1.4	
C	N	183	165	348
	%	5.6	5.6	5.6
	Z _d	.0	.0	
C-	N	61	68	129
	%	1.9	2.3	2.1
	Z _d	-.8	.9	
< = D	N	34	38	72
	%	1.0	1.3	1.1
	Z _d	-.6	.7	
TOTAL	N	3297	2964	6261
	%	100	100	100

Table 7
Statistical Summary of Test Forms Used in the 1999-2000 Test Cycle

	Fall	Winter
Number of Items	140	140
Number of Scores	3617	3171
Low Scores Excluded	72	52
Mean	78.254	80.939
Lowest Score	35	35
Highest Score	126	137
Standard Deviation	18.124	17.549
Standard Error of Mean	.301	.312
Reliability	.916	.911
Standard Error of Measurement	5.262	5.224

Table 8
Analysis of Raw Score Mean Differences Between Fall and Winter Test Administrations

Analysis of Variance Summary Table

Covariates		SS	df	MS	F	Sig.
	GPA	536877	1	536877.39	430.63	.000
	Grade	250184	1	250184.39	200.67	.000
	Ethnicity	29071	4	7267.80	5.83	.050
Main Effects	Form	23863	1	23863.43	19.14	.000
Residual		7578903	6079	1246.74		
Total		8424133	6086	1384.18		

Table 9
Summary of ICEPT Passing Rates

Group		% of Students Obtaining a Passing Score
Overall		16.3
Ethnicity/Gender		
Asian	Male	41.0
	Female	24.7
	Total	32.9
Black	Male	7.4
	Female	2.9
	Total	4.9
Hispanic	Male	7.8
	Female	6.7
	Total	7.2
Native American	Male	14.3
	Female	12.5
	Total	13.3
White	Male	19.3
	Female	13.3
	Total	16.2
Other	Male	33.3
	Female	13.9
	Total	23.1
Gender		
	Male	19.5
	Female	13.1
Grade in School		
	9	6.9805
	10	11.8182
	11	17.0381
	12	28.9663
GPA (self-report)		
	A +	40.3
	A	26.3
	A-	16.2
	B +	13.0
	B	9.7
	B-	5.7
	C +	5.3
	C	3.7
	C-	3.1
	< = D	5.6

Table 10
ANOVA Tests for the Impact of Demographic Characteristics on the ICEPT Passing Score

Summary Table for Ethnicity					
	SS	df	MS	F	Sig.
Between Groups	83592.265	5	16718.453	12.452	.000
Within Groups	8787715.932	6545	1342.661		
Total	8871308.197	6550			

Summary Table for Gender					
	SS	df	MS	F	Sig.
Between Groups	69336.871	1	69336.871	51.425	.000
Within Groups	8937901.856	6629	1348.303		
Total	9007238.727	6630			

Summary Table for Grade in School					
	SS	df	MS	F	Sig.
Between Groups	219808.854	3	73269.618	54.811	.000
Within Groups	8727703.774	6529	1336.760		
Total	8947512.628	6532			

Summary Table for GPA					
	SS	df	MS	F	Sig.
Between Groups	721427.042	9	80158.560	63.072	.000
Within Groups	7944373.948	6251	1270.896		
Total	8665800.990	6260			

Table 11
ICEPT Results 1986-99

Test Year	Number Ordered	Number Tested	Number Passing	Secondary School Enrollment	%
1986-87		38,905	4,510	575,845	0.8
1987-88	47,673	24,441	3,129	560,529	0.6
1988-89	54,545	24,961	3,063	536,448	0.6
1989-90	42,839	19,403	3,255	518,798	0.6
1990-91	40,517	19,101	3,300	516,515	0.6
1991-92	41,400	18,083	1,505	522,167	0.3
1992-93	37,329	15,215	1,938	530,286	0.4
1993-94	36,358	14,899	2,554	537,187	0.5
1994-95	34,977	15,771	3,592	550,296	0.7
1995-96	35,778	15,968	1,414	555,463	0.3
1996-97	33,728	13,699	2,779	563,369	0.5
1997-98	33,077	14,222	1,653	562,905	0.3
1998-99	31,334	12,565	2,401	562,298	0.4
1999-00	31,923	12,187	2,315	567,674	0.4

Table 12
ICEPT Area Scores for the Total 1999-2000 Test Population

Area	Mean
07 Taxes	62
10 Food	58
04 The Marketplace	56
09 Housing	55
06 Insurance	55
02 Credit	53
05 Saving/Investing	52
01 Money Management	52
03 The Economy	52
08 Transportation	52

Table 13
ICEPT Area Scores 1995-99

A. Total Test Population

Area	95	96	97	98	99
01 Money Management	48	54	49	51	52
02 Credit	44	54	50	52	53
03 The Economy	52	55	52	55	52
04 The Marketplace	54	59	51	59	56
05 Saving/Investing	44	51	50	54	53
06 Insurance	54	55	51	57	55
07 Taxes	49	55	52	54	62
08 Transportation	55	51	53	51	52
09 Housing	53	57	50	53	55
10 Food	55	58	54	55	58

B: Gender Comparisons

Area	Males					Females				
	95	96	97	98	99	95	96	97	98	99
01 Money Management	50	54	52	51	54	47	55	48	51	51
02 Credit	45	55	50	53	53	43	53	50	53	52
03 The Economy	55	58	50	57	55	49	54	50	57	49
04 The Marketplace	54	59	54	60	56	53	59	50	60	56
05 Saving/Investing	46	54	53	57	54	42	49	48	57	51
06 Insurance	55	58	54	59	55	53	53	51	59	55
07 Taxes	50	56	52	55	62	48	54	52	55	61
08 Transportation	56	53	53	54	55	54	49	51	54	49
09 Housing	52	58	55	55	56	54	56	49	55	55
10 Food	55	57	52	55	58	55	59	54	55	58

C. Comparisons by Year in School

Area	9th Grade					10th Grade				
	95	96	97	98	99	95	96	97	98	99
01 Money Management	44	49	43	45	45	47	52	48	50	50
02 Credit	42	45	45	44	45	43	50	49	49	51
03 The Economy	47	48	45	48	45	51	53	50	54	50
04 The Marketplace	48	54	47	53	48	53	58	50	59	54
05 Saving/Investing	41	45	46	47	44	43	49	49	52	51
06 Insurance	50	43	45	49	48	53	51	50	55	53
07 Taxes	41	48	47	47	53	46	53	50	52	59
08 Transportation	47	44	46	44	45	53	49	51	50	50
09 Housing	49	51	44	45	46	52	55	49	51	53
10 Food	50	53	48	50	50	54	56	53	55	56

Area	11th Grade					12th Grade				
	95	96	97	98	99	95	96	97	98	99
01 Money Management	50	55	50	53	53	52	61	53	56	59
02 Credit	44	56	51	54	54	46	63	55	58	58
03 The Economy	53	56	52	57	53	57	65	59	62	58
04 The Marketplace	55	60	52	61	56	58	64	56	65	63
05 Saving/Investing	44	52	51	55	53	49	58	56	61	58
06 Insurance	55	58	53	59	56	59	65	57	63	60
07 Taxes	51	56	53	55	63	56	62	59	60	68
08 Transportation	56	52	54	53	53	61	58	57	57	57
09 Housing	54	58	51	54	57	56	64	57	62	61
10 Food	55	59	55	57	59	59	62	59	59	62

Figure 1
Results Across Topic Areas

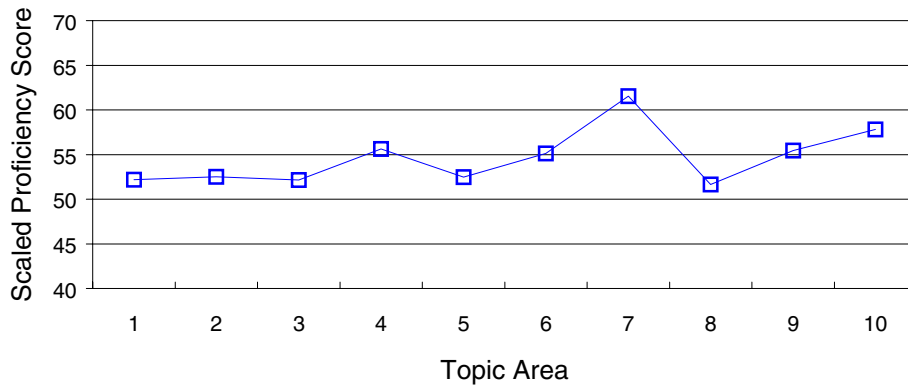


Figure 2
Topic Area Gender Comparisons

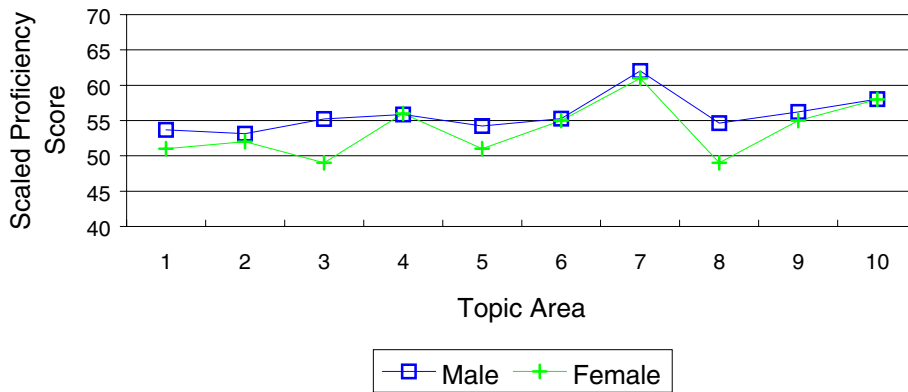


Figure 3
Topic Area Grade Comparisons

