

**Report on the  
2002-2003  
Administration  
of the Illinois  
Consumer  
Education Proficiency  
Test**

ILLINOIS STATE BOARD OF EDUCATION  
ASSESSMENT DIVISION

## **School Participation in the 2002-2003 ICEPT Test Cycle<sup>1</sup>**

The Illinois Consumer Education Proficiency Test (ICEPT) was administered twice during the 2002-2003 school year: October 1-2, 2002 and January 28-29, 2003. In response to order forms sent to all Illinois public secondary schools announcing the two ICEPT test dates, a total of 28,878 test booklets, 29,675 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 2002-2003 test cycle.<sup>2</sup> As Table 1 shows, 187 of 655 schools (29%) tested students during both administration periods, 232 (35%) tested students during one of the two administration periods, and 62 (9%) ordered materials for one or both administration periods but did not test any students. A total of 176 schools (27%) 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 2002-2003 ICEPT test cycle ( $n = 11,254$ ). The sample

( $N = 5,830$ )<sup>3</sup> includes only students who 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 2002-2003 test population obtained from school reports is 22.9% (2,574/11,254) while the rate obtained for the sample described in this report is 17.1%. Because of the large discrepancy between these values, results reported here should be interpreted cautiously.

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, 18.8% for Fall, 15.3% 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

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<sup>1</sup> 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 .

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

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<sup>3</sup> Because some students do not code all demographic information used in the subsequent analyses, the sample sizes vary from table to table.

of independence. That is, the higher this statistic in absolute value, the greater the departure of the cell from expectation, the larger the resulting  $\chi^2$  and the higher 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 ( $\chi^2 = 19.35$ ,  $df = 5$ ,  $p < .002$ ) and current grade in school ( $\chi^2 = 370.81$ ,  $df = 3$ ,  $p < .000$ ). 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 ( $\chi^2 = 18.32$ ,  $df = 9$ ,  $p = .032$ ).

### **Technical Characteristics of the Test Forms**

Although two different ICEPT forms were administered during the 2002-2003 test cycle, results were pooled for purposes of analyzing student performance on ICEPT in relationship to certain demographic variables. The two test forms were designed to be equivalent in content and calibrated to produce equivalent passing scores. Table 7 presents a summary of certain statistical characteristics of the two test forms used in the 2002-2003 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 2002-2003 test cycle are very high. The raw score means, standard deviations, and standard errors of measurement are very similar.

A 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 not statistically

significant. These results are reported in Table 8.

### **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 5,830 students on which we have data is 17.1%. The passing rate is 23.6% for Asian males, 20.7% for Asian females, and 22.3% 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, ethnicity, gender, grade in school, and GPA all show statistically significant effects. Gender, grade in school, and GPA appear to be the most important factors, and ethnicity appears to be the least important factor. As would be expected, students who report having higher overall grade point averages passed at much higher rates than students who report lower overall grade point averages. For example, 38% of students who reported an overall grade point average of A+ passed the test. Less than 4% of the students who reported an overall GPA of D or lower passed the test. Students at higher grade levels passed at higher rates than students at lower grade levels.

### **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 generally declined, but much more slowly. 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 5 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, Recreation, and Home Furnishing—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 2002-2003 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 The Marketplace and lowest in Housing. Results of statistical tests for differences between mean scores across area are indicated by spaces between areas. For example, student performance in Credit is significantly higher than in Food. Performance in Food, The Economy and Taxes are not significantly different. 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 Credit, Housing, and Food. The differences favor males.

Figure 3 compares student performance in each area across grades. As would be expected, performance in each area is highest for 12<sup>th</sup>-grade students and lowest for 9<sup>th</sup>-grade students. For the 2002-2003 test population, student performance improved most from 11<sup>th</sup> to 12<sup>th</sup> grade (5.3 scale score points) and least from 10<sup>th</sup> grade to 11<sup>th</sup> grade (1.7 scale score points). The change from 9<sup>th</sup> to 10<sup>th</sup> grade [4.2 scale score points] is in line with what has been found previously.

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, there is no clear evidence of consistent patterns of change over years across areas. As Sections B and C of Table 13 show, there are some interesting variations across various groups. For example, differences between men and women in The Market-

place and Food are generally negligible. Over time, the differences between men and women have, on average, tended to become smaller. Food generally remains among the highest areas across grade in school, and Money Management is often the lowest.

**Table 1**  
**Summary of School Participation in the 2002-2003 ICEPT Test Cycle**

Description	Number
Schools Testing Students During Both Administration Cycles	185
Schools Testing Students During the Fall Administration Period Only	138
Schools Testing Students During the Winter Administration Period Only	94
Schools Ordering Materials for One or Both Administration Period, but Not Testing Any Students	62
Schools That Did Not Order Materials for Either Administration Period	176

**Table 2**  
**Demographic Composition of the 2002-2003 ICEPT Examinee Population**

	Frequency	Percent
Ethnicity		
Asian	131	2.3
Black	152	2.7
Hispanic	136	2.4
Native American	17	.3
White	5046	90.3
Other	109	1.9

**Table 2 (continued)**

	Frequency	Percent
Gender		
Male	2695	47.5
Female	2984	52.5
Grade in School		
9	424	7.5
10	1219	21.4
11	3285	57.7
12	763	13.4
GPA (self-report)		
A +	582	11.1
A	1327	25.3
A-	775	14.8
B+	675	12.9
B	800	15.3
B-	394	7.5
C +	315	6.0
C	261	5.0
C-	80	1.5
< = D	29	.6

**Table 3**

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

		Fall	Winter	Total
Asian	N	63	68	131
	%	2.1%	2.6%	2.3%
	Z <sub>d</sub>	-.9	1.0	
Black	N	60	92	152
	%	2.0%	3.6%	2.7%
	Z <sub>d</sub>	-2.4	2.7	
Hispanic	N	81	55	136
	%	2.7%	2.1%	2.4%
	Z <sub>d</sub>	.9	-.9	
Native American	N	7	10	17
	%	.2%	.4%	.3%
	Z <sub>d</sub>	-.7	.8	
White	N	2747	2299	5046
	%	90.9%	89.5%	90.3%
	Z <sub>d</sub>	.4	-.4	
Other	N	65	44	109
	%	2.2%	1.7%	1.9%
	Z <sub>d</sub>	.8	-.9	
TOTAL	N	3023	2568	5591
	%	100.0%	100.0%	100.0%

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

		Fall	Winter	Total
Male	N	1458	1237	2695
	%	47.5%	47.4%	47.5%
	Z <sub>d</sub>	.0	.0	
Female	N	1612	1372	2984
	%	52.5%	52.6%	52.5%
	Z <sub>d</sub>	.0	.0	
TOTAL	N	3070	2609	5679
	%	100.0%	100.0%	100.0%

**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	154	270	424
	%	5.0%	10.4%	7.5%
	Z <sub>d</sub>	-5.0	5.4	
10	N	514	705	1219
	%	16.7%	27.0%	21.4%
	Z <sub>d</sub>	-5.7	6.2	
11	N	1786	1499	3285
	%	57.9%	57.5%	57.7%
	Z <sub>d</sub>	.2	-.2	
12	N	629	134	763
	%	20.4%	5.1%	13.4%
	Z <sub>d</sub>	10.6	-11.5	
TOTAL	N	3083	2608	5691
	%	100.0%	100.0%	100.0%

**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	296	286	582
	%	10.4%	12.0%	11.1%
	Z <sub>d</sub>	-1.1	1.2	
A	N	709	618	1327
	%	24.9%	25.8%	25.3%
	Z <sub>d</sub>	-.5	.5	
A-	N	432	343	775
	%	15.2%	14.3%	14.8%
	Z <sub>d</sub>	.5	-.6	
B +	N	391	284	675
	%	13.7%	11.9%	12.9%
	Z <sub>d</sub>	1.3	-1.4	
B	N	463	337	800
	%	16.3%	14.1%	15.3%
	Z <sub>d</sub>	1.4	-1.5	
B-	N	192	202	394
	%	6.7%	8.4%	7.5%
	Z <sub>d</sub>	-1.5	1.7	
C +	N	171	144	315
	%	6.0%	6.0%	6.0%
	Z <sub>d</sub>	.0	.0	
C	N	135	126	261
	%	4.7%	5.3%	5.0%
	Z <sub>d</sub>	-.6	.6	
C-	N	45	35	80
	%	1.6%	1.5%	1.5%
	Z <sub>d</sub>	.2	-.3	
< = D	N	13	16	29
	%	.5%	.7%	.6%
	Z <sub>d</sub>	-.7	.8	
TOTAL	N	2847	2391	5238
	%	100.0%	100.0%	100.0%

**Table 7**  
**Statistical Summary of Test Forms Used in the 2002-2003 Test Cycle**

	Fall	Winter
Number of Items	140	140
Number of Scores	3145	2619
Low Scores Excluded	44	39
Mean	80.090	79.220
Lowest Score	35	35
Highest Score	139	123
Standard Deviation	18.354	17.973
Standard Error of Mean	.327	.351
Reliability	.917	.911
Standard Error of Measurement	5.277	5.371

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

Analysis of Variance Summary Table

Source	SS	df	MS	F	Sig.
Between Forms	1220.46	1	1220.46	3.37	.298
Within Forms	2111962.05	5828	362.38		
Total	2113182.51	5829			

**Table 9**  
**Summary of ICEPT Passing Rates**

Group	% of Students Obtaining a Passing Score
Overall	17.1
Ethnicity/Gender	
Asian Male	23.6
Asian Female	20.7
Asian Total	22.3
Black Male	4.3
Black Female	2.9
Black Total	3.3
Hispanic Male	8.1
Hispanic Female	6.8
Hispanic Total	7.4
Native American Male	14.3
Native American Female	.0
Native American Total	5.9
White Male	21.9
White Female	13.6
White Total	17.6
Other Male	23.5
Other Female	19.0
Other Total	21.1
Gender	
Male	21.4
Female	13.2
Grade in School	
9	6.4
10	13.3
11	16.5
12	32.4
GPA (self-report)	
A +	38.0
A	28.2
A-	18.5
B +	10.7
B	7.6
B-	5.3
C +	5.4
C	5.4
C-	3.8
< = D	3.4

**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	49602.093	5	9920.419	7.042	.000
Within Groups	7844448.858	5568	1408.845		
Total	7894050.951	5573			

Summary Table for Gender					
	SS	df	MS	F	Sig.
Between Groups	95278.818	1	95278.818	68.112	.000
Within Groups	7941329.740	5677	1398.860		
Total	8036608.558	5678			

Summary Table for Grade in School					
	SS	df	MS	F	Sig.
Between Groups	245641.244	3	81880.415	59.291	.000
Within Groups	7853662.921	5687	1380.985		
Total	8099304.164	5690			

Summary Table for GPA					
	SS	df	MS	F	Sig.
Between Groups	669219.762	9	74357.751	55.852	.000
Within Groups	6960213.228	5228	1331.334		
Total	7629432.990	5237			

**Table 11**  
**ICEPT Results 1986-2003**

Test Year	Number Ordered	Number Tested	Number Passing	Secondary School Enrollment	%
1986-90 <sup>a</sup>	48,352	26,928	3,489	547,905	0.6
1991-95 <sup>a</sup>	38,116	16,614	2,578	531,290	0.5
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
2000-01	29,681	12,445	2,016	577,432	0.3
2001-02	30,693	11,434	1,772	588,169	0.3
2002-03	29,878	11,254	2,574	595,349	0.2

<sup>a</sup> Average values are shown for five-year periods.

**Table 12**  
**ICEPT Area Scores for the Total 2002-2003 Test Population**

Area	Mean
Marketplace	58
Economy	58
Credit	58
Food	57
Taxes	57
Transportation	57
Insurance	56
Saving	56
Money	56
Housing	54

**Table 13**  
**ICEPT Area Scores 1998-2003**

A. Total Test Population

Area	98-99	99-00	00-01	01-02	02-03
Money Management	51	52	53	48	56
Credit	52	53	53	53	58
The Economy	55	52	56	52	58
The Marketplace	59	56	59	48	58
Saving/Investing	54	53	54	54	56
Insurance	57	55	58	48	56
Taxes	54	62	56	52	57
Transportation	51	52	51	49	57
Housing	53	55	51	57	54
Food	55	58	58	57	57

B: Gender Comparisons

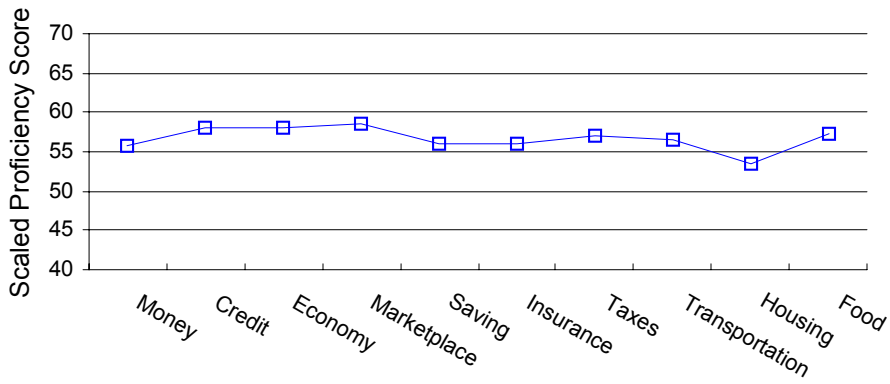
Area	Males					Females				
	98-99	99-00	00-01	01-02	02-03	98-99	99-00	00-01	01-02	02-03
Money Management	51	54	53	50	56	51	51	54	46	55
Credit	53	53	52	55	58	53	52	54	51	58
The Economy	57	55	57	53	60	57	49	55	51	56
The Marketplace	60	56	58	49	59	60	56	59	47	58
Saving/Investing	57	54	56	55	57	57	51	53	53	54
Insurance	59	55	58	49	57	59	55	58	48	55
Taxes	55	62	57	54	58	55	61	55	50	55
Transportation	54	55	52	51	58	54	49	50	48	55
Housing	55	56	53	58	54	55	55	49	56	53
Food	55	58	59	58	57	55	58	58	57	57

C. Comparisons by Year in School

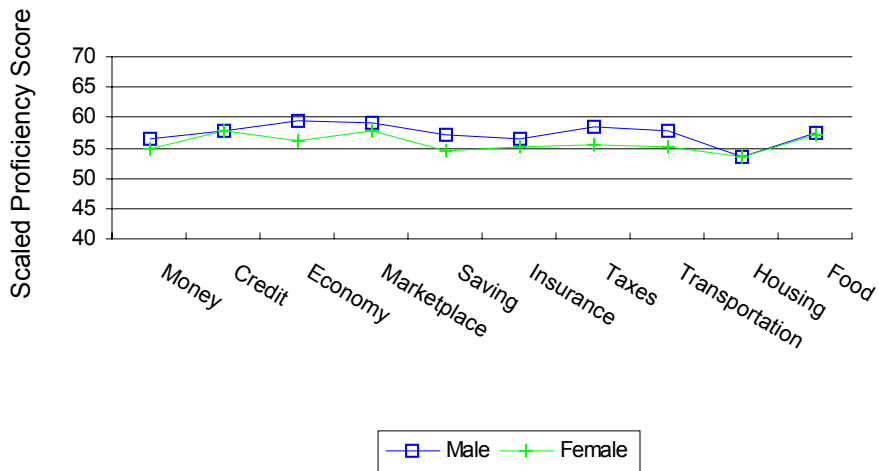
Area	9th Grade					10th Grade				
	98-99	99-00	00-01	01-02	02-03	98-99	99-00	00-01	01-02	02-03
Money Management	45	45	48	43	51	50	50	52	47	54
Credit	44	45	47	46	54	49	51	50	50	57
The Economy	48	45	51	47	51	54	50	54	50	56
The Marketplace	53	48	53	42	52	59	54	57	47	56
Saving/Investing	47	44	50	47	49	52	51	52	52	53
Insurance	49	48	53	45	50	55	53	57	47	55
Taxes	47	53	52	45	51	52	59	54	51	55
Transportation	44	45	45	45	50	50	50	49	47	55
Housing	45	46	47	51	48	51	53	48	55	53
Food	50	50	55	50	52	55	56	58	56	57

Area	11th Grade					12th Grade				
	98-99	99-00	00-01	01-02	02-03	98-99	99-00	00-01	01-02	02-03
Money Management	53	53	54	48	56	56	59	58	53	62
Credit	54	54	54	53	58	58	58	62	63	62
The Economy	57	53	56	52	58	62	58	62	58	65
The Marketplace	61	56	60	48	58	65	63	64	55	66
Saving/Investing	55	53	55	55	56	61	58	60	60	61
Insurance	59	56	58	48	56	63	60	62	53	59
Taxes	55	63	57	53	57	60	68	61	56	64
Transportation	53	53	52	50	57	57	57	56	55	62
Housing	54	57	52	57	54	62	61	55	61	57
Food	57	59	59	58	57	59	62	60	63	62

**Figure 1**  
**Results Across Topic Areas**



**Figure 2**  
**Topic Area Gender Comparisons**



**Figure 3**  
**Topic Area Grade Comparisons**

