

**An Analysis of Reading Growth over Time at
Codman Academy Charter Public School
DRP Results Fall 2001 – Spring 2004**

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Why Use the DRP?

Codman Academy Charter Public School (CACPS) administers the Degrees of Reading Power (DRP) test to all students in order to assess their achievement in reading. The Head of School, Meg Campbell, chose the DRP for several reasons. First, she was interested in a reliable, nationally normed test that specifically measured reading comprehension. She also needed a test that could be used to gather baseline data and measure school progress over time, as well as to help tailor instruction to individual students. Campbell decided on the DRP after reading an account of the test in the 2001 Harvard Educational Review article “Apprenticing Adolescent Readers to Academic Literacy,” by Greenleaf, Schoenbach, Cziko, and Mueller. Greenleaf et al. reported choosing the test in order to “measure changes in student reading comprehension *processes*” and because it required “little from the teachers in the way of time and interpretation, while yielding information useful in instructional decisionmaking.”¹

As described in the DRP handbook, DRP tests, developed by Touchstone Applied Science Associates, Inc., “have a number of properties that distinguish them from all other reading tests.”² The following properties are quoted directly from the DRP handbook:

- The test items are designed so that the paragraph or passage in which they are embedded must be read and understood in order for the student to answer correctly...
- All of the content information that is needed to select the correct response is contained within the paragraph or passage. No prior familiarity with the subject matter is required to answer the embedded items correctly...
- Regardless of the difficulty of the prose paragraph or passage, all response options are common words—that is, they occur with extremely high frequency in written materials. Students should be able to recognize and understand the response options. Failure to respond correctly to test items can be attributed to a failure to comprehend the text in which they appear.
- Primary and Standard DRP paragraphs and passages are designed to reduce the likelihood that guessing strategies, associative processes, and other non-reading activities can be used to generate correct responses...
- Item difficulty is linked to test difficulty. The student should be able to respond correctly to most of the items in the test up to the point at which the student cannot understand the text of a passage well enough to decide which word is correct.
- All Primary and Standard DRP tests are untimed...students who may be slower readers, as well as those who may become anxious because of a time limit, are not penalized.

¹ Greenleaf, C., Schoenbach, R., Cziko, C., and Mueller, F. Apprenticing Adolescent Readers to Academic Literacy. *Harvard Educational Review*, v. 71 (1), Spring 2001, p. 119.

² DRP Handbook, p. 2 (Touchstone Applied Science Associates, Inc., 2000)

- Primary and Standard DRP tests are particularly useful in measuring student progress because all forms and levels of Primary and Standard DRP tests measure the same construct of reading...
- Primary and Standard DRP tests are holistic measures. That is, they measure the process of comprehension rather than specific skills or strategies often associated with reading.³

As for measures of its reliability, the DRP uses the Kuder-Richardson (K-R 20) measure of internal consistency. “The K-R 20 coefficients range from .93 to .97 with 59 of the 72 coefficients equal to or greater than .95.”⁴ (1.0 would be perfectly reliable). These coefficients are indicative of a highly reliable test using the measure of internal consistency.

The DRP Scale of Readability

Additionally, the way the test is scaled can be especially helpful for teachers and parents, as the DRP Scale of Readability provides examples of texts that students should be able to read given their score on the scale (see Appendix A). DRP scores are reported “in terms of the most difficult text the student can read with a given level of comprehension.”⁵ The DRP reports student performance in terms of the Independent Level (90% comprehension), the Instructional Level (75% comprehension), and the Frustration Level (50% comprehension). For example, a student scoring a 53 on the scale at the Independent Level should be able to read, without teacher assistance, elementary school textbooks and core literature at the level of Scott O’Dell’s *Island of the Blue Dolphins*. Knowing a student’s Independent Level of reading on the DRP should allow teachers to recommend appropriate reading materials to students for use outside the classroom. According to Campbell, Codman Academy’s goal is for all students to be able to read at the DRP Independent Level of 63 by graduation. On the DRP Scale of Readability, that would mean that students were able to independently read high school textbooks, driver’s license manuals, and core literature such as *2001: A Space Odyssey*. At the Instructional Level, meaning with some teacher assistance, students would be able to read such texts as *The Adventures of Don Quixote* and science periodicals. Using national norms gathered in the year 2000, a score of 63 would place Codman students at the 50th percentile rank nationally.⁶ All the scores in this report are based on student performance at the Independent Level, or what students are able to read without teacher assistance. All the scores would appear approximately 10 points higher on the readability scale if one chose to look at what Codman students are capable of reading *with* teacher assistance.

Codman Students’ Growth

At Codman Academy, all students take the DRP upon first entering the school and again each spring thereafter. The DRP is administered and scored by Penny Lawrence, a Special Education and former elementary school teacher. Per test instructions, students are given as much time as they need to complete the test during each administration. After scoring, the

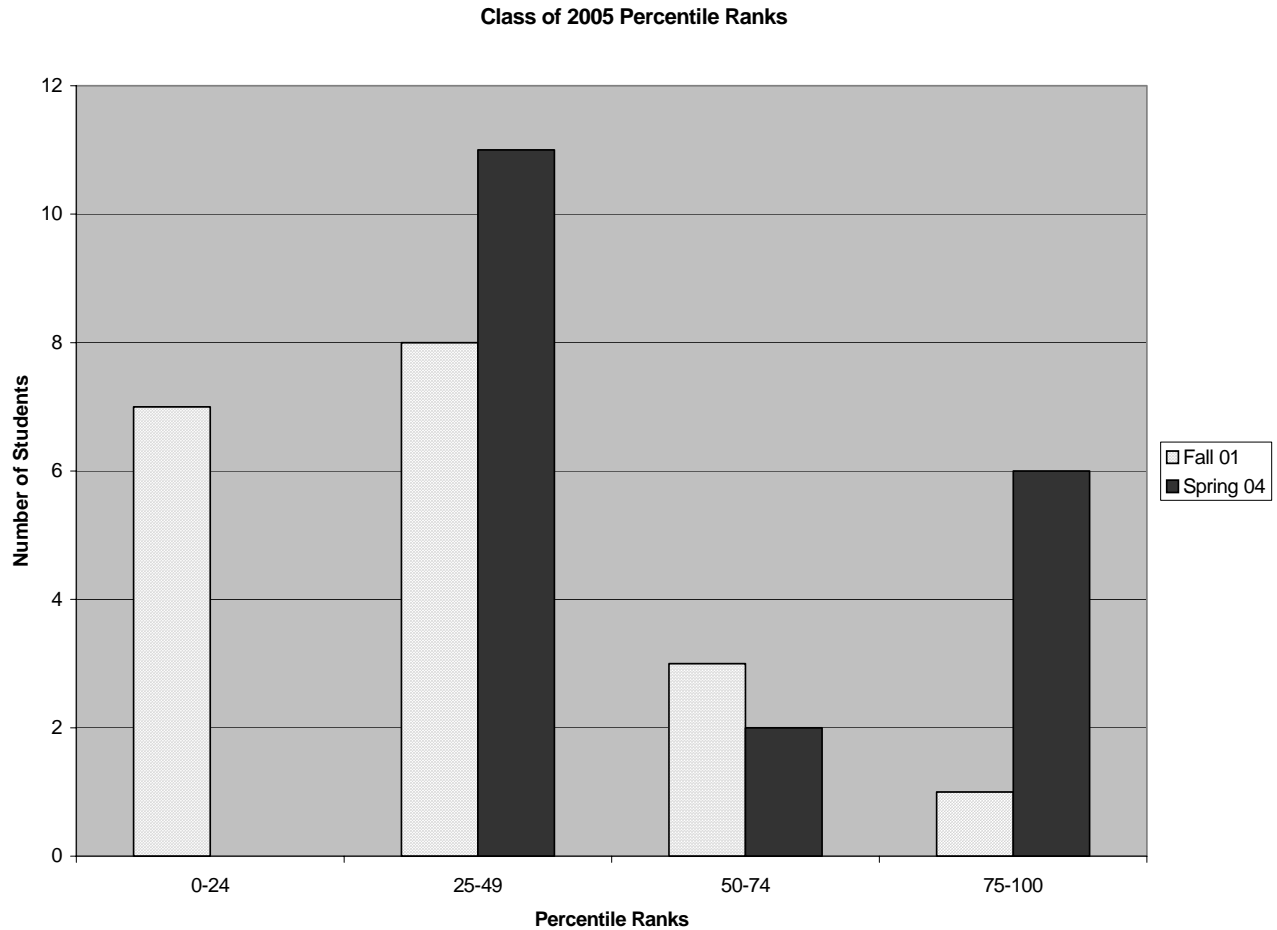
³ Bullet points quoted directly from the DRP Handbook, pgs. 2 –3

⁴ DRP Handbook, p. 58

⁵ DRP Handbook, p. 15

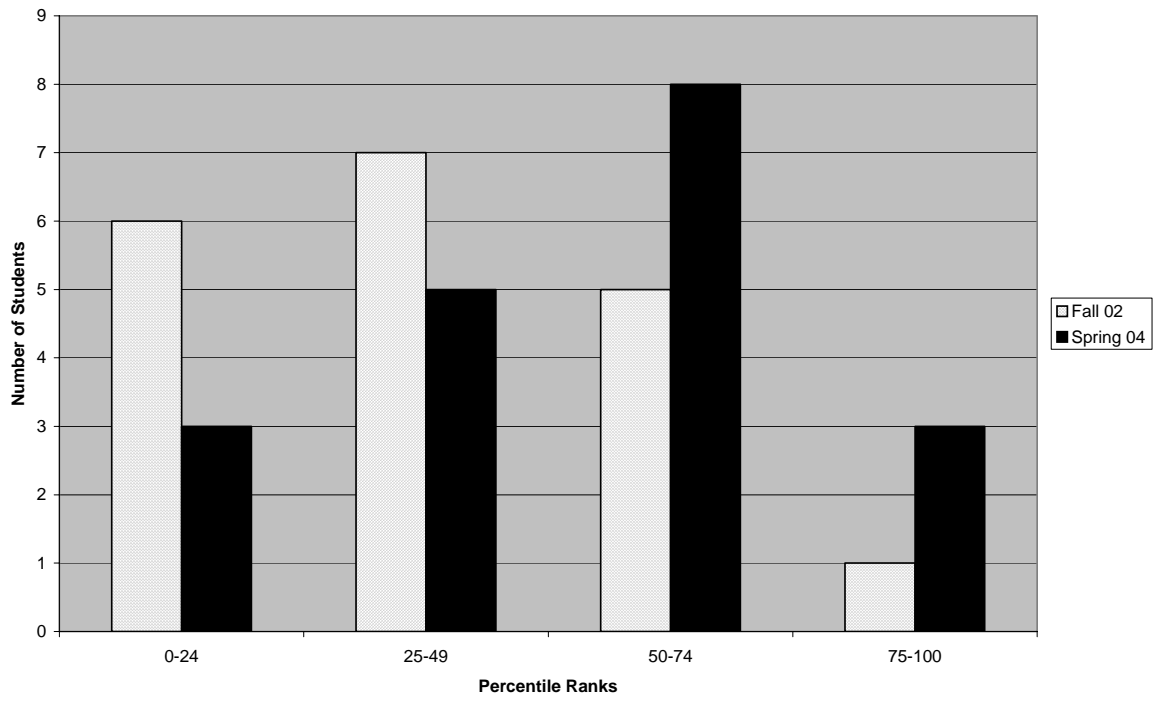
⁶ DRP Handbook, p. 16

school's instructional leaders use the results to gauge how classes are performing overall and to identify individual students who need additional assistance. The school especially focuses on coming to the aid of those students who fall beneath the 25th percentile rank. This strategy seems to be effective, as each cohort is demonstrating movement of its students out of the lowest quartile. In the fall of 2001, as the class of 2005 entered Codman, there were seven students falling beneath the 25th percentile rank. By the spring of 2004, the end of the class of 2005's junior year, or 3rd year at Codman, zero students fell beneath the 25th percentile rank.

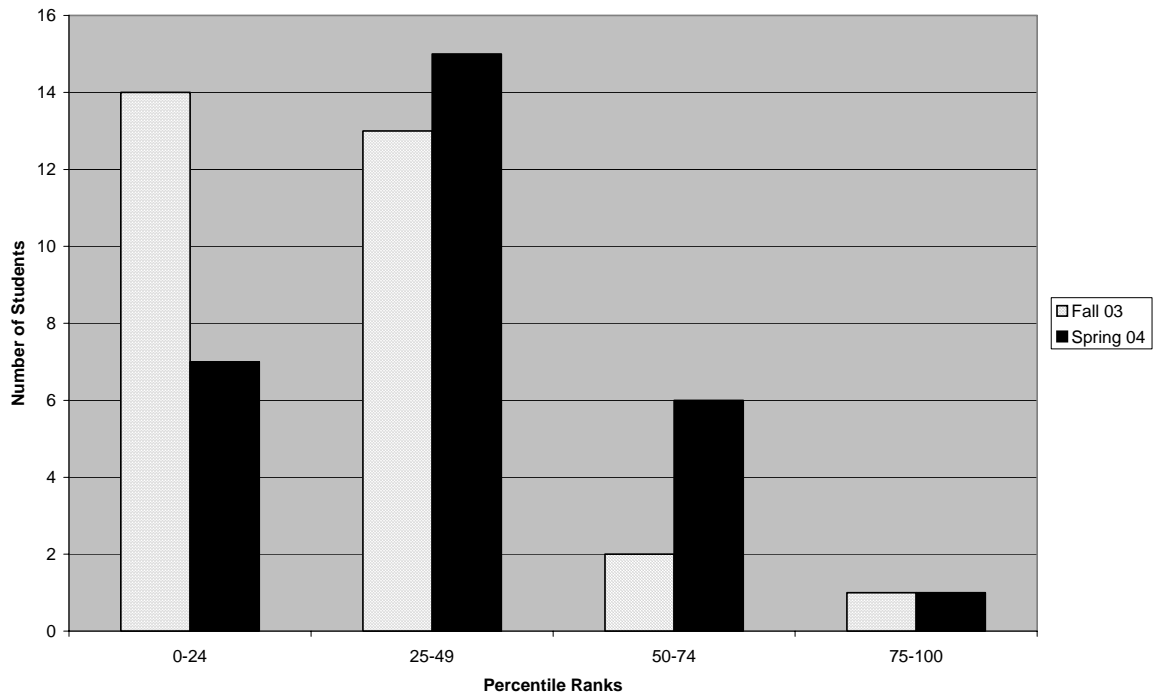


The classes of 2006 and 2007 also seem to be following that trend, as they have already cut the number of students in the lowest quartile in half.

Class of 2006 Percentile Ranks

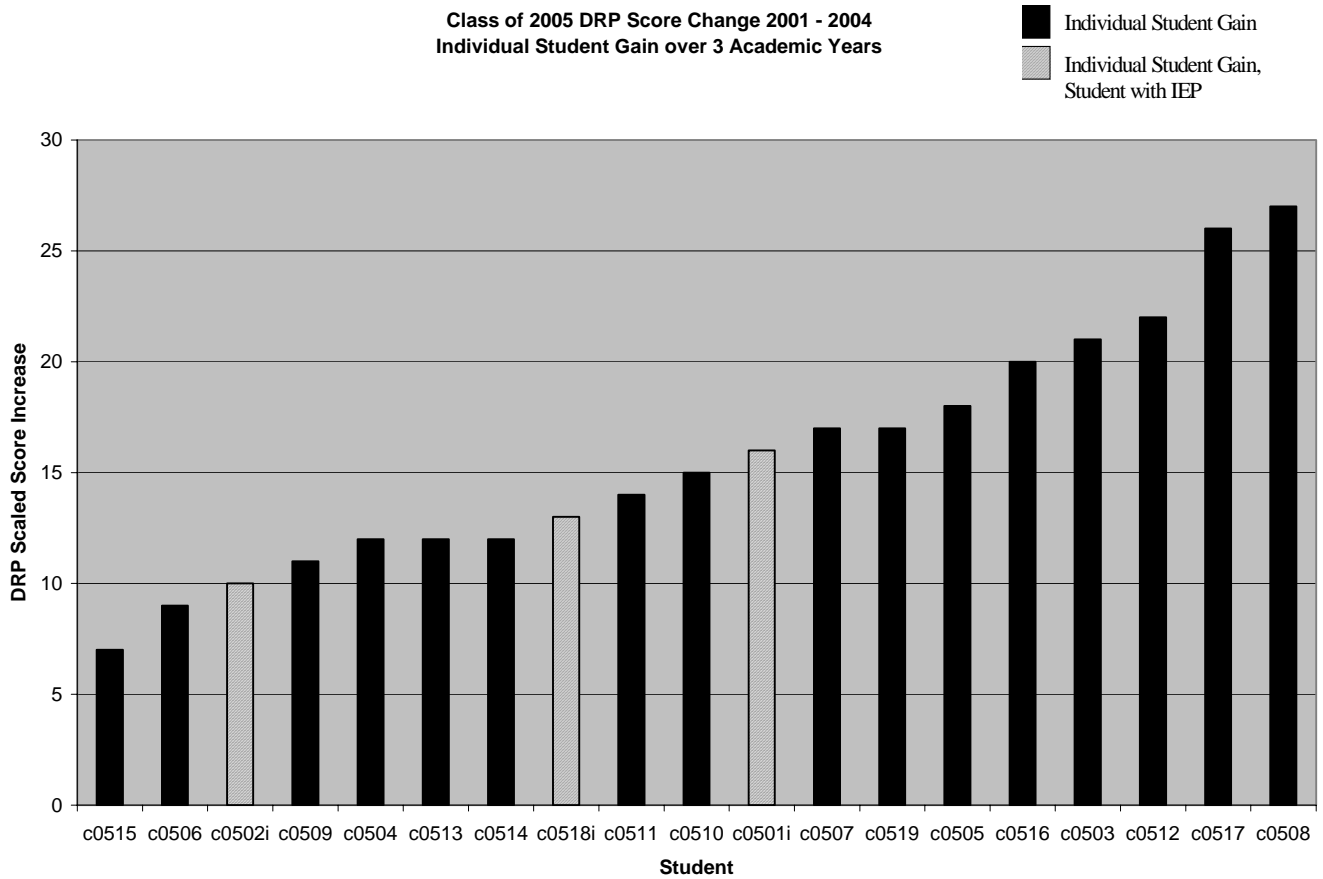


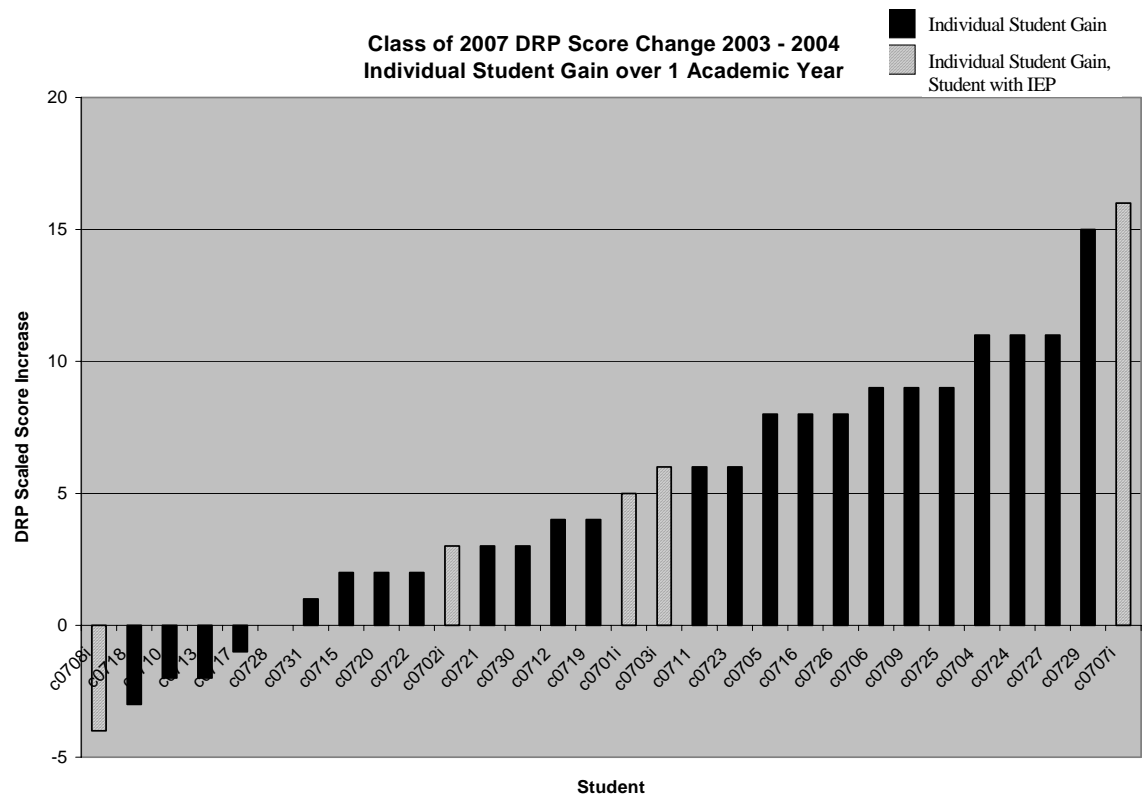
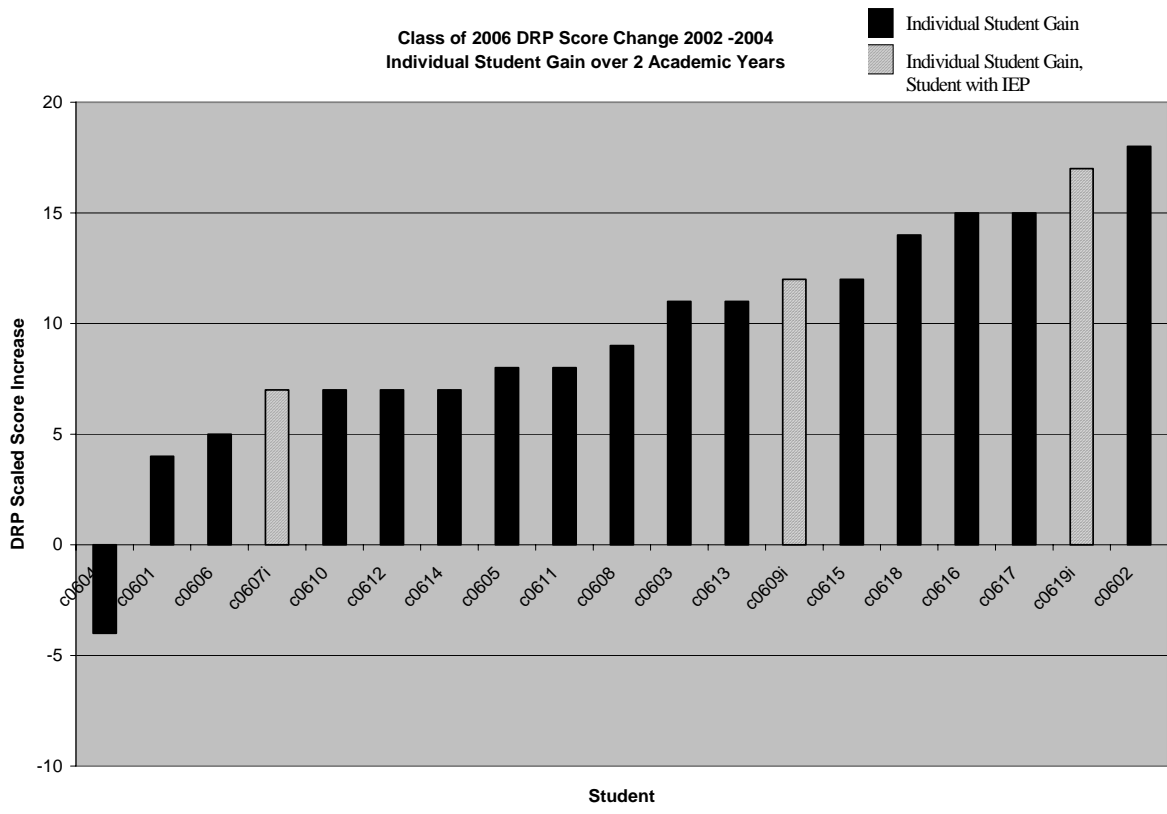
Class of 2007 Percentile Ranks



This is not to say that students in the higher quartiles are neglected. By no means does this appear to be the case. Students entering at all levels on the DRP scale show growth as they progress through the years at CACPS (See Appendix B).

- **100% of the Class of 2005 has improved in reading since they entered Codman in 2001.**
In Fall 2001, 21% of the class was scoring at or above the 50th percentile rank. In Spring 2004, 42% of the class was scoring at or above the 50th percentile rank.
- **94% of the Class of 2006 has improved in reading since they entered Codman in 2002.**
In Fall 2002, 32% of the class was scoring at or above the 50th percentile rank. In Spring 2004, 58% of the class was scoring at or above the 50th percentile rank.
- **80% of the Class of 2007 has improved in reading since they entered Codman in 2003.**
In Fall 2003, 10% of the class was scoring at or above the 50th percentile rank. In Spring 2004, 24% of the class was scoring at or above the 50th percentile rank.





Furthermore, students are progressing faster than average. According to the DRP Handbook, average yearly growth on the DRP scale is 1-2 points. Codman students are progressing at a rate of about 5 points per year, or double the anticipated growth rate:

- The Class of 2005 entered in Fall 2001 with an average DRP score of 49. Their average DRP score in Spring 2004 was 63.5. As a class, they have improved by 14.5 points over the course of 3 years.
- The Class of 2006 entered in Fall 2002 with an average DRP score of 50. Their average DRP score in Spring 2004 was 60. As a class, they have improved by 10 points over the course of 2 years.
- The Class of 2007 entered in Fall 2003 with an average DRP score of 47. Their average DRP score in Spring 2004 was 52. As a class, they have improved by 5 points over the course of 1 year.

Codman student gains are all the more impressive when one takes into consideration the fact that many of these students are entering the school at an elementary reading level (See Appendix C). Over the course of 2 – 3 years, Codman students are managing to reach reading levels consistent with those of their peers around the country. They are, in effect, quickly recovering lost ground.

- In the fall of 2001, 63% of the class of 2005 was reading at an elementary school level. By the spring of 2004, their junior year, not a single student was reading at an elementary level. 37% were reading at a middle school level and 63% at a high school level.
- In the fall of 2002, 53% of the class of 2006 was reading at an elementary school level. By the spring of 2004, their sophomore year, only 16% of the class was reading at an elementary school level. 26% were reading at a middle school level and 58% were reading at a high school level.
- In the fall of 2003, 70% of the class of 2007 was reading at an elementary level, 23% were reading at a middle school level, and only 7% were reading at a high school level. In the spring of 2004, the end of their freshman year, only 42% of the class was still reading at an elementary level, while 35% were reading at a middle school level and 23% at a high school level.

Finally, Codman's Special Education students are among those demonstrating the most growth in reading.

- The students with IEPs in the Class of 2005 have an average improvement of 13 points over the course of 3 years.

- The students with IEPs in the Class of 2006 have an average improvement of 10 points over the course of 2 years.
- The students with IEPs in the Class of 2007 have an average improvement of 6 points over the course of 1 year.

Clearly, CACPS students are demonstrating substantial gains in reading comprehension during their time at the school, as measured by the DRP.

One caveat:

Given the small sample sizes, class averages, or means, could be significantly skewed by the high or low performance of a single student. That does not appear to be the case with Codman's data, as the percentages, or actual numbers, of students improving are quite high. Furthermore, a look at the ranges and medians of the data also indicates substantial improvement:

Class of 2005

Range of Scores Fall 2001: 29 – 72	Median: 47
Range of Scores Spring 2004: 55 - 82	Median: 61

Class of 2006

Range of Scores Fall 2002: 37 – 68	Median: 50
Range of Scores Spring 2004: 48 - 75	Median: 61

Class of 2007

Range of Scores Fall 2003: 29 - 67	Median: 47
Range of Scores Spring 2004: 34 – 68	Median: 54

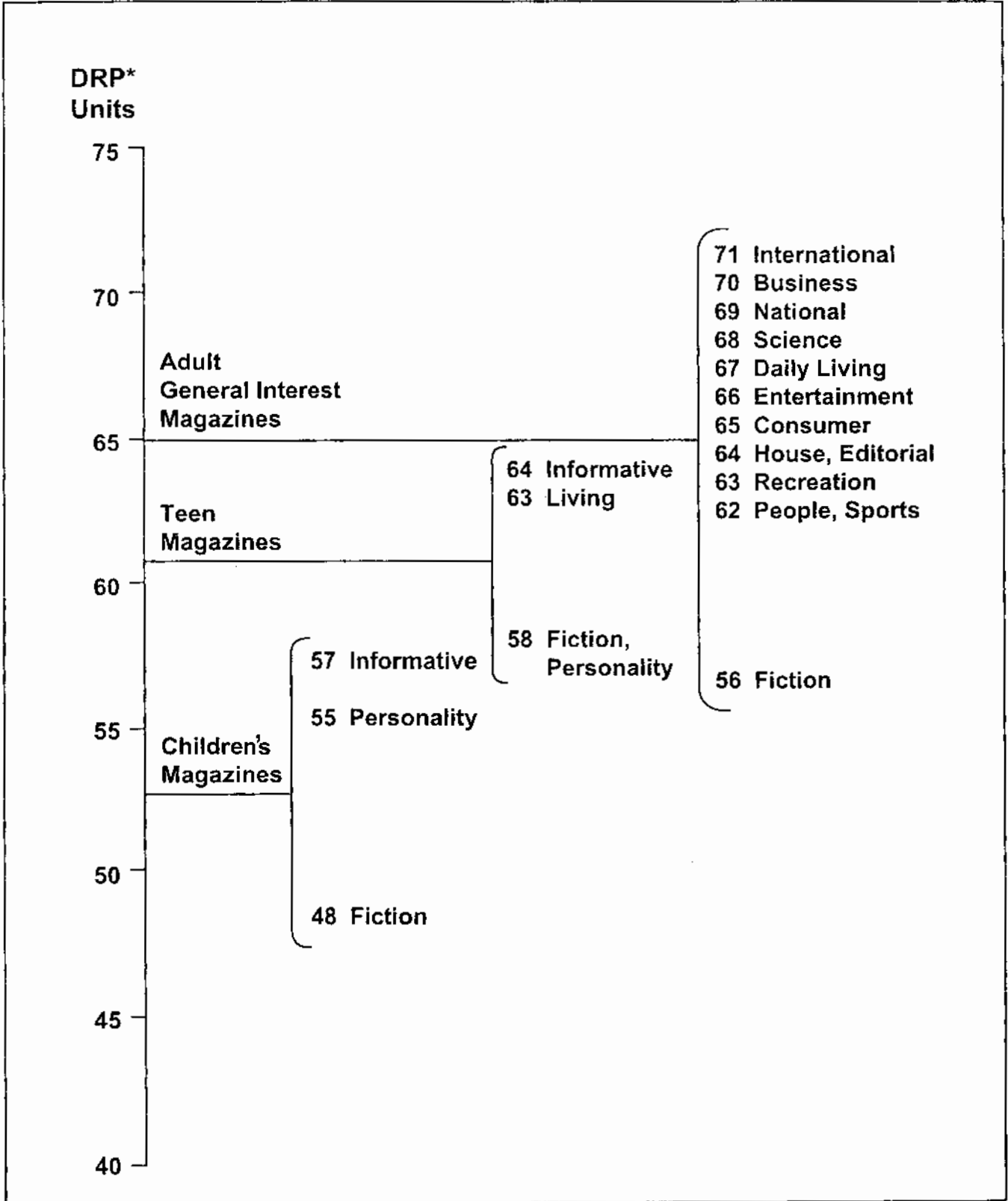
DEGREES OF READING POWER (DRP) TESTS AND THE CONCEPT OF READABILITY

Exhibit 6. The DRP Scale of Readability

	76	<i>Moll Flanders</i>
	75	
	74	
	73	<i>The Adventures of Don Quixote</i>
	72	<i>Books that Changed the World</i>
	71	<i>Robinson Crusoe</i>
	70	<i>Absalom, Absalom</i>
Front Page of Newspapers*	69	<i>Profiles in Courage</i>
	68	<i>Silent Spring</i>
	67	<i>The Scarlet Letter</i>
	66	<i>Democracy in America</i>
	65	<i>The Prince</i>
Driver's License Manuals*	64	<i>One Hundred Years of Solitude</i>
	63	<i>2001: A Space Odyssey</i>
High School Textbooks*	62	<i>Roots</i>
	61	<i>Jane Eyre</i>
	60	<i>Animal Farm</i>
	59	<i>Across Five Aprils</i>
	58	<i>Anne Frank: The Diary of a Young Girl</i>
	57	<i>The Hobbit</i>
Middle School Textbooks*	56	<i>Baseball's Greatest Games</i>
	55	<i>The Adventures of Tom Sawyer</i>
	54	<i>Harry Potter and the Sorcerer's Stone</i>
	53	<i>Island of the Blue Dolphins</i>
	52	<i>Number the Stars</i>
	51	<i>Old Yeller</i>
Elementary School Textbooks*	50	<i>Charlotte's Web</i>
	49	<i>How to Eat Fried Worms</i>
	48	<i>Sarah, Plain and Tall</i>
	47	<i>The Magic School Bus Inside the Earth</i>
	46	<i>Math Curse</i>
	45	<i>Superfudge</i>
	44	<i>The Boxcar Children</i>
	43	<i>Amelia Bedelia</i>
	42	<i>Shoeshine Girl</i>
	41	<i>Frog and Toad Are Friends</i>
Primary School Textbooks*	40	<i>Chicka Chicka Boom Boom</i>
	39	<i>The Golly Sisters Go West</i>
	38	<i>Nate the Great</i>
	37	<i>Clifford, the Big Red Dog</i>
	36	<i>Morris the Moose</i>
	35	<i>The Cat in the Hat</i>
	34	<i>Are You My Mother?</i>
	33	<i>Ranger Don</i>
	32	
	31	<i>Green Eggs and Ham</i>

* Average text difficulty

Average Readability of Periodicals



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Exhibit 5. Degrees of Reading Power (DRP) Difficulty Values for Samples of Prose

34 DRP Units

Bears are big. They need a lot of food. Bears eat meat. They eat bugs. They eat berries. They eat honey. They eat fish, too. Bears feed in the spring. They feed in the summer. They feed in the fall. Bears look for food then. They hunt. They fish. They dig roots. They pick berries. They eat a lot. They grow fat. Soon, winter comes. It gets cold. It snows. But the bears don't need to go out. They don't need food. They are fat enough. They can sleep.

39 DRP Units

A bird's wings are well shaped for flight. The wing is curved. It cuts the air. This helps lift the bird. The feathers are light. But they are strong. They help make birds the best fliers. A bird can move them in many directions. Birds move their wings forward and down. Then they move them up and back. This is how they fly.

43 DRP Units

Many states are dry in summer. They get hardly any rain. Nearly all their water comes from melted snow. It is stored. It is kept in dammed-up ponds and lakes. It is used during the growing season to water farms and orchards. Farmers buy the water. They are told how much they will be able to get. The amount changes each year. It depends on how snowy the winter was. A farmer needs to know how much he will receive. It allows him to decide which of several crops he ought to plant. The choice is based on how much water different crops need.

47 DRP Units

The part of a beach between high and low tide is called the middle beach. It is home to many plants and animals. But life on this middle beach is hard. There is no protection against the wash of the oncoming waves. Some animals survive by digging holes in the sand. They can stay in their homes under ground. The undertow will not pull them out to sea. They are safe.

51 DRP Units

Most creatures take care to protect their eggs. The walking stick does not. It just drops its eggs, scattering them loosely on the ground. Dozens and dozens drop at a time. As the eggs fall onto dry leaves, they sound like raindrops falling. Many of the eggs do not hatch. But enough do so that the walking sticks will not die out. They have existed on earth since before the era of the dinosaurs.

Note: The readability calculations are based upon longer samples.

56 DRP Units

The people of Greece used the alphabet of the Semites. At first the Greeks wrote from right to left and left to right in alternating lines. The Greek name for this system of writing came from their words for "ox" and "turn." The method reminded them of oxen going back and forth, plowing a field. Eventually, the Greeks wrote only in one direction, as most people do now.

61 DRP Units

Natural gems are often treated to enrich their original colors. Stones such as jade and lapis lazuli are made darker by staining them. Over time, though, the color may fade. But fading is not unique to dyed gems. Some natural stones may lose color, too, if exposed to sunlight. Permanent changes in color can often be achieved by heating gems. A brown topaz, for example, turns a delicate pink when heated to 720 degrees Fahrenheit. Gemstones must be heated slowly, however, or they will crack.

64 DRP Units

Wall paintings are especially vulnerable to atmospheric change. Archaeologists know this. Hence they try to discover, before opening a tomb, whether they will find murals. Special tools have been designed for this purpose. One of the most useful is a kind of camera that can be dropped into the ground before the digging starts. If the camera indicates the presence of wall art, scientists can prepare to take steps to preserve the painting as soon as it is reached.

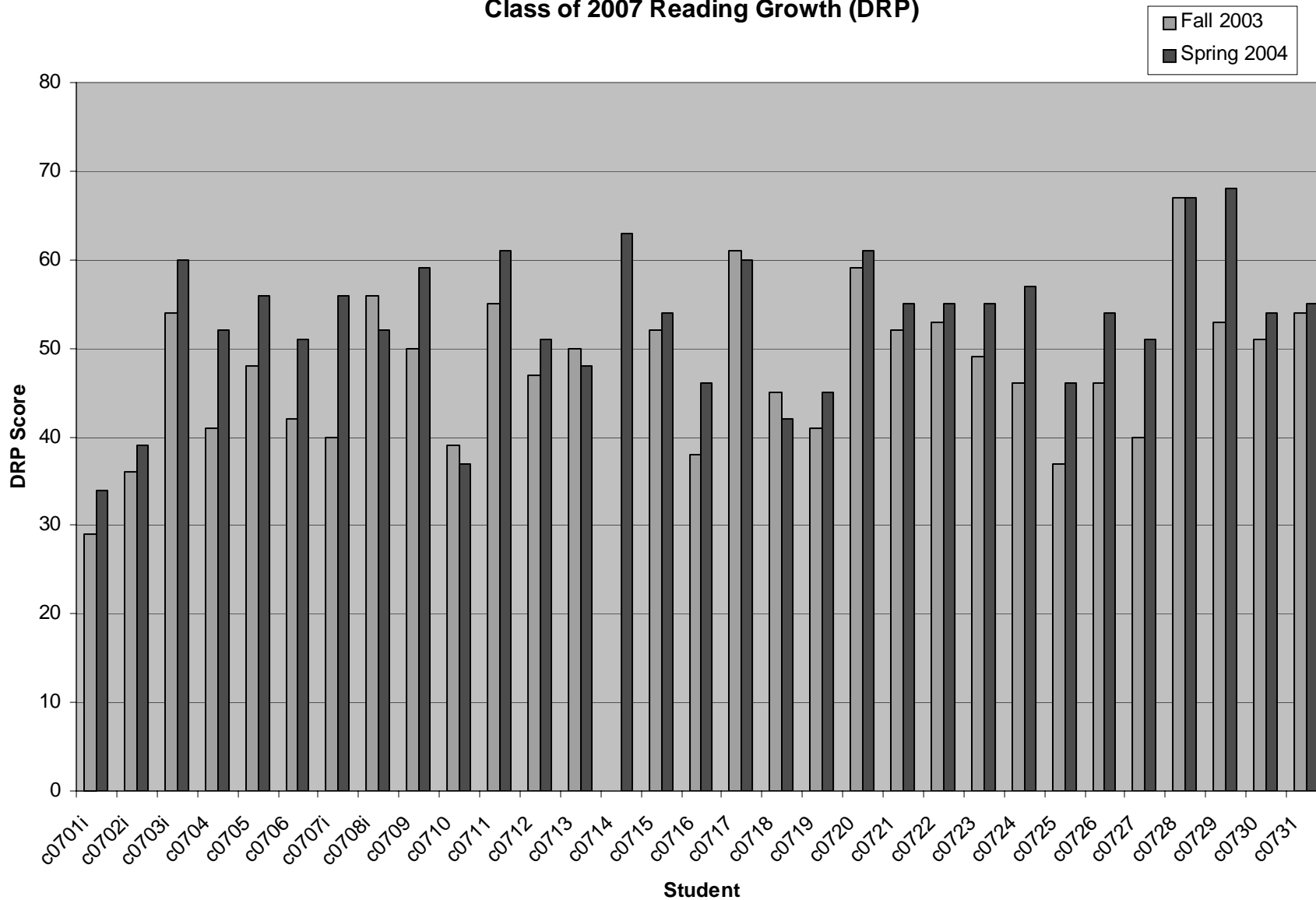
73 DRP Units

Hellenistic literature showed an interest in individual history and psychology, rather than man in general. Theophrastus' *Characters*, with its detailed portraits of such types as the flatterer, appeared during this time. Biography, dealing with the lives of real people, was a flourishing form. And in philosophy the emphasis was on personal conduct rather than speculation about reality.

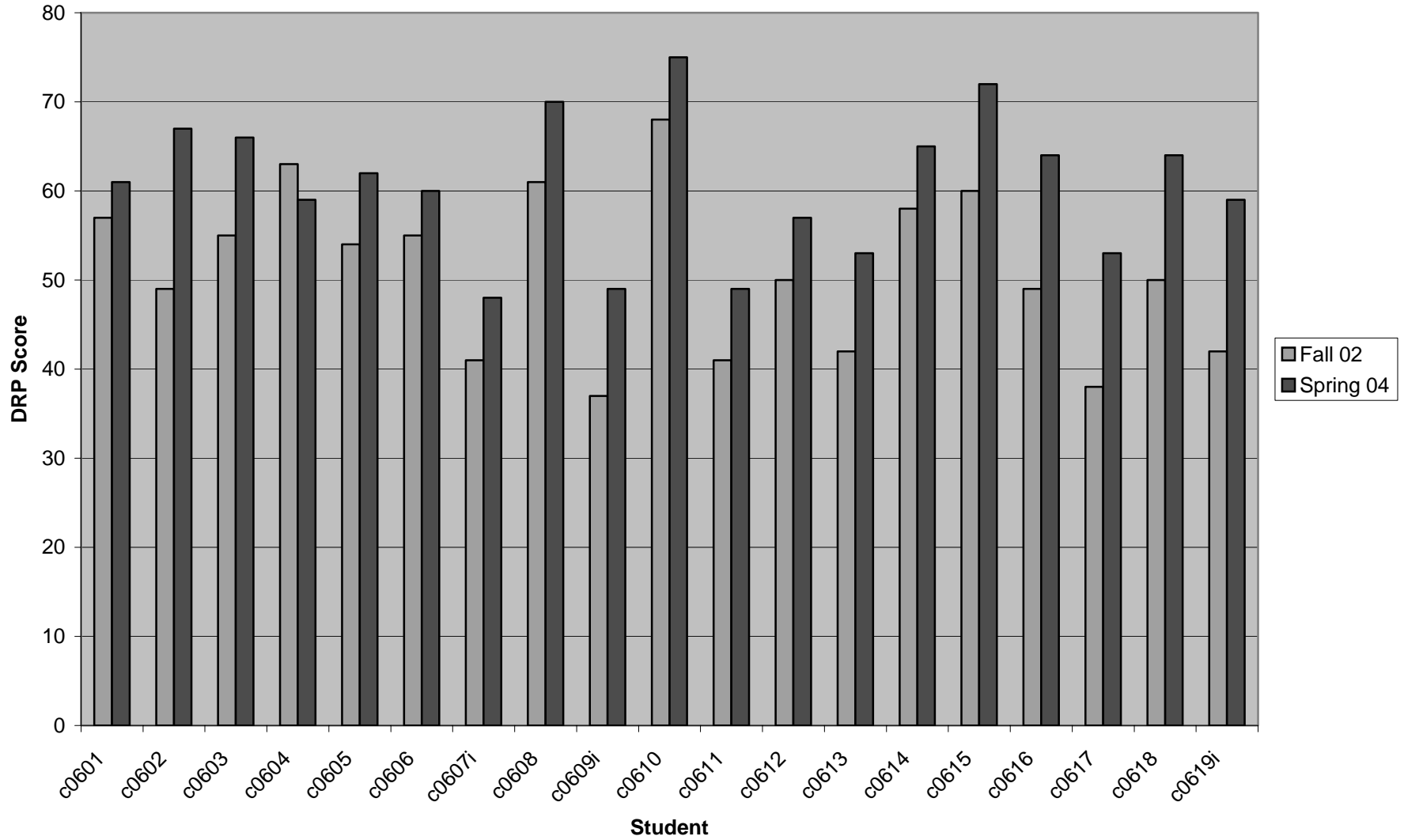
81 DRP Units

Jefferson's preference for an agrarian society and his idealization of the independent farmer reflected a conviction that representative government required a secure and relatively prosperous economic base to function successfully. He perceived the farmer as economically independent, and thus unlikely to surrender his judgment as a citizen to the influence of demagogues. His dislike and distrust of cities derived from a conviction that urban conditions, especially for the poorer classes, forced men into such a bitter struggle for sheer self-preservation that their natural moral sense could not be relied upon to produce social harmony or to guarantee responsible citizenship.

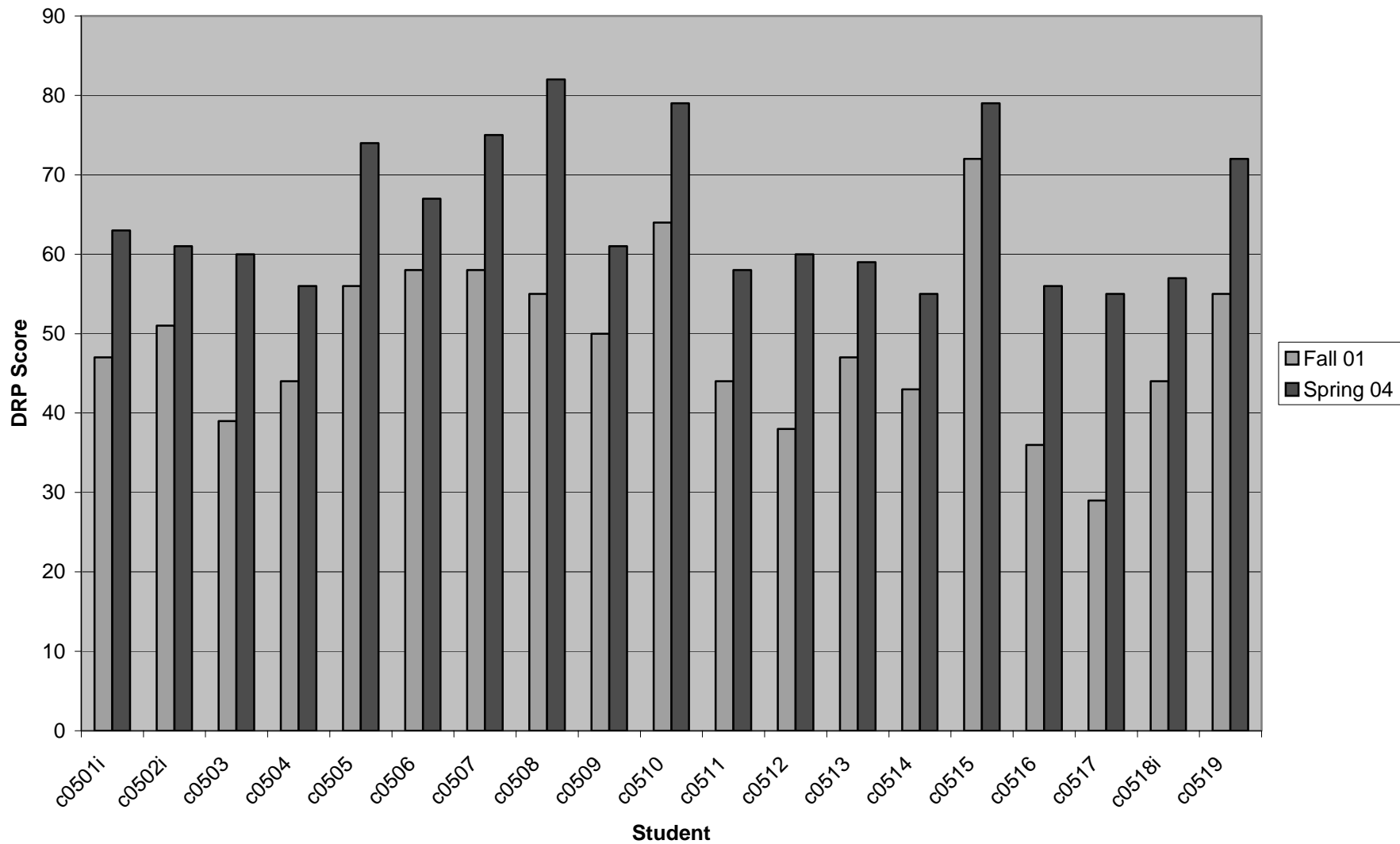
Class of 2007 Reading Growth (DRP)



Class of 2006 Reading Growth (DRP)



Class of 2005 Reading Growth (DRP)



Class of 2007

Student	Fall 2003	Spring 2004
c0701i	29	34
c0702i	36	39
c0703i	54	60
c0704	41	52
c0705	48	56
c0706	42	51
c0707i	40	56
c0708i	56	52
c0709	50	59
c0710	39	37
c0711	55	61
c0712	47	51
c0713	50	48
c0714		63
c0715	52	54
c0716	38	46
c0717	61	60
c0718	45	42
c0719	41	45
c0720	59	61
c0721	52	55
c0722	53	55
c0723	49	55
c0724	46	57
c0725	37	46
c0726	46	54
c0727	40	51
c0728	67	67
c0729	53	68
c0730	51	54
c0731	54	55

	Elementary School reading level
	Middle School reading level
	High School reading level

Class of 2006

Student	Fall 2002	Spring 2004
c0601	57	61
c0602	49	67
c0603	55	66
c0604	63	59
c0605	54	62
c0606	55	60
c0607i	41	48
c0608	61	70
c0609i	37	49
c0610	68	75
c0611	41	49
c0612	50	57
c0613	42	53
c0614	58	65
c0615	60	72
c0616	49	64
c0617	38	53
c0618	50	64
c0619i	42	59

	Elementary School reading level
	Middle School reading level
	High School reading level

Class of 2005

Student	Fall 2001	Spring 2004
c0501i	47	63
c0502i	51	61
c0503	39	60
c0504	44	56
c0505	56	74
c0506	58	67
c0507	58	75
c0508	55	82
c0509	50	61
c0510	64	79
c0511	44	58
c0512	38	60
c0513	47	59
c0514	43	55
c0515	72	79
c0516	36	56
c0517	29	55
c0518i	44	57
c0519	55	72

	Elementary School reading level
	Middle School reading level
	High School reading level

GLOSSARY

Authentic Test: Often used interchangeably with **performance test**, a test with multiple-choice, open ended, or essay type questions may be considered authentic if the items or tasks on the test are similar to the outcomes students are expected to achieve.

Average: A general term that applies to various measures of central tendency. The mean, median, and mode are the most widely used averages. If the term "average" is used without designation as to type, the most likely assumption is that it is the mean.

Ceiling & Floor Effects: If students get all or almost all of the items correct on a test, they can be considered at the **ceiling** of the test. In other words, the ability of these students is greater than the test can reliably estimate. Students who get no or very few of the items correct are considered at the **floor**. For these students their ability is lower than the test can reliably estimate. Generally, students who are at the ceiling should be administered a more difficult test form. Conversely, students who are at the floor should be administered an easier form of the test.

Comprehension: Comprehension is the process of constructing meaning from text while it is being read.

Criterion-Referenced Test: Criterion-referenced means that student performance can be interpreted in relation to a **criteria** rather than in relation to the performance of other students. Criterion-referenced interpretations typically describe student performance in relation to each of the objectives measured by the test. In spite of the label, criterion-referenced tests are usually standardized and many of them are normed.

Diagnostic Test: A diagnostic test is designed to identify students' particular strengths and weaknesses in the belief that having done so, teachers would be able to correct or remediate the supposed deficiencies. Some diagnostic tests may be administered to a group, while others must be administered individually. Like other tests, they are often standardized and normed.

DRP Levels of Comprehension: Levels of comprehension are used to indicate how well a student can read text with an assigned readability value. The terms P=.50, .70, P=.75, P=.80, and P=.90 are used to represent several Levels of Comprehension. The Frustration Level

(P=.50) means that a student can understand about 50 percent of text with a certain DRP value. The Instructional Level (P=.70 through P=.80) means that a student can comprehend between 70 and 80 percent of text, and the Independent Level (P=.90) means that a student can understand 90 percent of text at a given level of difficulty. Therefore, a student who receives a DRP Score of 60 at P=.90 can read a book as difficult as 60 on the DRP difficulty scale and understand 90 percent of the material. A student whose Frustration Level (P=.50) DRP Score is 50 would have considerable difficulty reading a book as difficult as 50.

DRP Score Scale: Scores on DRP tests are reported on a scale that runs from 15- to 99+. The minus (-) sign indicates that DRP tests cannot estimate student performance accurately below a score of 15. Similarly, the plus (+) sign indicates that DRP tests cannot estimate student performance accurately above 99. DRP Scores, which are scale scores, adjust for differences in test length and difficulty. This means they can be compared directly across different DRP test forms.

DRP Tests: Primary and Standard DRP tests are not measures of what some may call literal comprehension, but rather measures of what might be called essential comprehension - a necessary, but not sufficient prerequisite to other higher-order cognitive processes of reading. These tests measure **the process or outcome of comprehension without measuring any specific set of discrete skills associated with reading**. Advanced DRP tests require students to identify, analyze, and evaluate propositions in text in order to select a valid summary, generalization, or conclusion that can be derived from the text.

DRP Text Difficulty or Readability Scale: Using the most technically accurate and valid readability formula available, **text difficulty or readability results are reported on a scale that is identical to the DRP Score scale**. For instance, a student who earns an Independent level DRP Score of 50 should be able to read textual material that has a DRP difficulty value of 50 with 90 percent comprehension.

Grade-Equivalents: A normative score scale used to describe student performance in relation to grade and month in school. For example, a grade-equivalent score of 5.8 means the student scored as well as the average

GLOSSARY

fifth grade student would have scored in May of the fifth grade. **Note:** Grade-equivalent scores are not related to grade-level values assigned to textbooks. To avoid confusion and misinterpretation, the International Reading Association passed a resolution asking test publishers not to produce grade-equivalent scores and teachers not to use them.

High-Stakes Test: A test for which the results are consequential for students, teachers, or administrators. Tests used for graduation, admissions, certification, and/or employment would be considered high-stakes tests for individuals. Tests administered statewide or districtwide for accountability are often considered high-stakes tests for teachers and administrators.

K-R 20: A formula developed by Kuder and Richardson to determine the reliability (internal consistency) of a test based on item intercorrelations. Values range from 0.0 to 1.00. Well constructed standardized tests often have K-R 20 values of .90 or higher.

Mean: The arithmetic average of a set of test scores, i.e., the sum of the scores divided by the number of scores.

Median: The middle score in a ranked distribution of scores. The median is also known as the 50th percentile. For most test score distributions, the mean and the median will be close in value. The median is usually preferred over the mean when describing "average" performance because it is affected less by extreme scores.

Mode: The mode is the most frequently observed score in a distribution of scores.

NCEs: Normal Curve Equivalents (NCEs) are normalized standard scores with a mean of 50 and a standard deviation of 21.06. Although NCEs look very much like percentile ranks, they are equivalent to percentile ranks only at the 1st, 50th, and 99th percentile rank. The advantage of NCEs over percentile ranks is that they form an equal-interval scale. Therefore, they can be added and averaged to determine group performance or subtracted to measure gains.

Norms: Test norms represent distributions of data for known reference groups of individuals. For example, the performance of all 6th grade students on a particular

test would represent a norms group. Norms are collected typically on a 6 or 7 year cycle from a sample of schools selected to represent schools nationally. Because norms may change over time, it is important to pay attention to the year in which the data were collected.

Test score norms are reported on one or more of the following scales: Percentile Ranks, Grade Equivalents, Stanines, or Normal Curve Equivalents (NCEs). Average performance for the norm group can be expressed as the 50th percentile, on grade-level, the 5th stanine, or an NCE score of 50. **Note:** Normative scales have no functional meaning. In other words, no normative score provides information regarding what a student knows or is able to do.

Norm-Referenced Test: Norm-referenced means that student performance is interpreted in relation to the performance of students in a norm group. Norm-referenced should not be used to describe a particular type of test because all tests can be normed. (See Norms.)

Percentiles: A percentile is a score that indicates a student's position within a distribution of scores. The percentile rank scale runs from 1 to 99+. If a student obtains a national percentile rank of 60, for example, then he or she has scored equal to or better than 60 percent of the students in the norm group. Similarly, 40 percent of the students in the norm group scored better than this student. It is important to remember that percentiles do not form an equal interval scale. This means that the 5 point difference between percentiles of 50 and 55, for example, may not be equal to the 5 point difference between percentiles 70 and 75. Because percentiles are not an equal interval scale, it is inappropriate to add, subtract, or average percentiles.

Percentile ranks, or percentiles, may be national or local. National percentile ranks are based on the performance of the student in relation to published national norms. Local percentiles are based on the performance of all students in a particular grade in a specific school or district.

Performance Test: Performance tests require students to construct or generate responses. Essay questions and writing samples are examples of performance tests.

GLOSSARY

Power vs. Speed Tests: Tests with items (tasks) arranged in order of difficulty and administered without time limits are considered power tests. Tests designed to find out how much a person can do within a specified time limit are considered speed tests. An example would be a five minute typing test. Most educational tests combine elements of power and speed. The items or tasks are usually arranged in order of difficulty and they are administered with strict time limits.

Quartiles: The 25th percentile, the 50th percentile, and the 75th percentile are also known as the first (Q1), second (Q2), and third (Q3) quartiles, respectively. Twenty-five percent of the students in a norm group score at or below Q1. Fifty percent of the students score at or below Q2, the 50th percentile. Fifty percent of the students also score between Q1 and Q3, known as the Interquartile Range. Finally, 25 percent of the students in the norms group score above Q3.

Range of Scores: The distance between the lowest and highest score in a distribution of test scores.

Readability: Readability refers to the difficulty of textual material. Well-written and professionally edited materials can be indexed in terms of their difficulty (readability). Most formulas for indexing text difficulty use what are called surface features of the text as a basis for the indexing. Word length, sentence length, and word frequency are examples of such surface features. The major limitation of readability formulas is that such formulas are not able to distinguish well-written, coherent material from material that is poorly written. Therefore, if a difficulty index is computed for poorly written materials, or for materials that assume particular content knowledge on the part of the reader, the index may underestimate the true difficulty of the materials.

Reliability: Reliability refers to the consistency or stability of a test score. Reliability is usually expressed in terms of a reliability coefficient or a standard error of measurement.

Reliability Coefficient: Reliability coefficients are represented by correlations between scores on two forms

of a test (Alternate-Form Reliability), between scores on two administrations of the same test (Test-Retest Reliability), or between scores on halves of a test corrected for test length (Split-Half Reliability).

Standard Deviation: A measure of the variability or dispersion of a set of scores around their mean.

Standard Error of Measurement: A statistic that provides an estimate of the possible amount of error present in a test score. For all tests, scores in the middle of the raw score distribution will have the smallest standard errors of measurement. Extreme scores, both high and low, will have the largest standard errors of measurement.

Standardized Test: A test is labelled "standardized" if there are standard directions and procedures for administering and scoring the test, and interpreting the test results. A standardized test may consist of multiple-choice questions, open-ended questions, or essay questions.

Stanines: The stanine scale, which is short for standard-nine, is a standard score scale with a mean of 5 and a standard deviation of 2. This creates a 9-point equal-interval scale that is useful because it is a single digit score.

Test Centering: The best measurement for the greatest number of students will occur when a test form is well-centered on the ability of the students to be tested. If the most difficult items challenge the best students, if the easiest items are appropriate for the weakest students, and if the typical student gets around half the items correct, then the test form would be considered well centered.

Test Validity: Validity refers to the appropriateness of the uses and interpretations of test scores. Since some uses and interpretations of test scores could be considered appropriate, while others inappropriate, validity should not be considered an inherent property of the test instrument per se.

CACPS DRP Data 2001 – 2004

- **100% of the Class of 2005 has improved in reading since they entered Codman in 2001.** In Fall 2001, 21% of the class was scoring at or above the 50th percentile rank. In Spring 2004, 42% of the class was scoring at or above the 50th percentile rank.
- **94% of the Class of 2006 has improved in reading since they entered Codman in 2002.** In Fall 2002, 32% of the class was scoring at or above the 50th percentile rank. In Spring 2004, 58% of the class was scoring at or above the 50th percentile rank.
- **80% of the Class of 2007 has improved in reading since they entered Codman in 2003.** In Fall 2003, 10% of the class was scoring at or above the 50th percentile rank. In Spring 2004, 24% of the class was scoring at or above the 50th percentile rank.

Average yearly growth on the DRP scale is 1-2 points. CACPS students are progressing at a rate of about 5 points per year, or double the anticipated growth rate:

	Average entering CACPS	Average Spring 2004	Average gains	Elementary school level	Middle school level	High school level
Class of 2005	49	63.5	14.5 pts over 3 yrs	2001 63% 2004 0%	2001 26% 2004 37%	2001 11% 2004 63%
Class of 2006	50	60	10 pts over 2 yrs	2002 53% 2004 16%	2002 26% 2004 26%	2002 21% 2004 58%
Class of 2007	47	52	5 pts over 1 yr	2003 70% 2004 42%	2003 23% 2004 35%	2003 7% 2004 23%

- The students with IEPs in the Class of 2005 have an average improvement of 13 points over the course of 3 years.
- The students with IEPs in the Class of 2006 have an average improvement of 10 points over the course of 2 years.
- The students with IEPs in the Class of 2007 have an average improvement of 6 points over the course of 1 year.

Class of 2005

Range of Scores Fall 2001: 29 – 72 Median: 47
 Range of Scores Spring 2004: 55 - 82 Median: 61

Class of 2006

Range of Scores Fall 2002: 37 – 68 Median: 50
 Range of Scores Spring 2004: 48 - 75 Median: 61

Class of 2007

Range of Scores Fall 2003: 29 - 67 Median: 47
 Range of Scores Spring 2004: 34 – 68 Median: 54