

**EVALUATION RESULTS OF THE  
DELAWARE STATE IMPROVEMENT GRANT:  
YEAR 4  
ANALYSIS OF  
STUDENT ASSESSMENT RESULTS  
SPRING 2006**

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BARBARA A. SHEPPERSON, M.ED., LEAD EVALUATOR  
KELLY L. SHERRETZ, M.P.A., EDUCATIONAL RESEARCHER  
XIAOYU QIAN, RESEARCH ASSISTANT

WITH ASSISTANCE FROM  
SHAWNA LANASA, UNDERGRADUATE RESEARCH ASSISTANT



Delaware Education Research & Development Center  
University of Delaware  
Newark, DE 19716

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## EXECUTIVE SUMMARY

In 2002, the U.S. Department of Education awarded a five-year State Improvement Grant (SIG) to the Delaware Department of Education. This report details the reading assessment results from the Delaware Student Testing Program (DSTP) for the 2006 spring administration and when appropriate, compares the performance of students from the spring 2003, 2004, and 2005 administrations. Through this initiative, students with disabilities will receive instruction aimed to improve literacy and reading skills in an inclusive educational environment through the use of trained teachers and the implementation of scientifically-based research regarding the teaching of early literacy and reading skills.

The primary focus of this five-year evaluation is to provide information regarding how well the project has met its primary goals:

- ✓ Improved literacy and reading skills for children with disabilities, and
- ✓ All students with mild and moderate disabilities will gain access to and progress in the general curriculum

The evaluation of the Delaware State Improvement Grant project will proceed along two lines of activity: 1) formative evaluation to provide relevant information to the project staff; and 2) outcome studies to address the impact of the initiative on students and schools as it relates to teaching and learning. Data to measure the progress towards project goals will be collected using a variety of methods including surveys, achievement tests, and classroom observations.<sup>1</sup> Selected evaluation findings from spring 2006 reading achievement results are highlighted below.

### STUDENT ACHIEVEMENT

- ☒ In 2006, the mean reading scores of special education students in grades 5 through 10 were significantly higher than in 2003. The mean reading scores of students in grades 9 and 10 were higher than in the previous three years.
- ☒ The 2006 mean reading scores of African American students were significantly higher than 2003 for grades 5 through 10. Mean 2006 scores for grade 5 and 9 were the highest scores achieved since 2003.
- ☒ Low income student mean scores for 2006, in grades 3 and 5-10 were significantly higher than 2003. In 2006, students in grades 5, 9, and 10 achieved their highest mean scores since 2003.

### DEMOGRAPHICS

- ☒ Since 2003, the number of Free/reduced price lunch status students has increased by about 18%.
- ☒ Since 2003, the number of students classified as English Language Learners almost doubled.
- ☒ The percentage of students in kindergarten through eighth grade who were retained in grade has consistently decreased from 2004 to 2006. In 2004, 7% of the students were retained in grade compared to 5% in 2006.

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<sup>1</sup> This report provides a detailed accounting of assessment results for the State Improvement Grant project for 2003, 2004, 2005, and 2006 student data. Researchers at the University of Delaware Education Research and Development Center (R&D Center) are available to answer questions regarding analyses presented in this report or to assist in their interpretations. R&D Center staff may be contacted via electronic mail at [ud-rtc@udel.edu](mailto:ud-rtc@udel.edu) or by phone at (302) 831-4433.

## INTRODUCTION

In the summer of 2003, the University of Delaware Education Research & Development Center accepted a contract to conduct a statewide evaluation of the recently awarded State Improvement Grant. This project and its attendant evaluation are funded through the U.S. Department of Education's State Improvement Grant program. The Delaware State Improvement Grant project targets children with disabilities attending preschool programs as well as students with disabilities in elementary, middle, and high schools throughout the state. The purpose of the evaluation is to provide relevant information for both project improvement and accountability purposes regarding its impact on 1) student learning, and 2) teachers' and parents' perceptions and behaviors regarding literacy education for student with disabilities.

In the State Improvement Grant application submitted through the Delaware Department of Education in 2002, the goals of the project included the following:

- To improve literacy and reading skills for children with disabilities in three age groups; preschool, kindergarten through 3<sup>rd</sup> grade, and grades 4 through 12;
- To increase access to and progress in the general education curriculum for students with mild or moderate disabilities.

Therefore, the primary focus of this evaluation is to provide information regarding how well the Delaware State Improvement Grant project has met these two goals.

The evaluation of the Delaware State Improvement Grant will proceed along two lines of activity:

- 1) formative evaluation to provide relevant information to the project directors; and
- 2) outcome studies to assess the impact of the initiative on students and schools as it relates to teaching and learning.

In the fall of 2003, fifteen public elementary schools serving students in grades kindergarten through third grade were participating in the Delaware State Improvement Grant projects. These focus schools were located in eight school districts. In 2005, one school was no longer participating as a SIG school. Additionally, individual teachers from preschool programs through twelfth grade from across the state participated in professional development training sessions.

## METHODOLOGY

### INTRODUCTION

The evaluation of the State Improvement Grant began during the 2003-2004 school year with the collection of student assessment data. Data from the spring 2003 administration of the reading portion of the DSTP served as the baseline. For students in grades two and three, only students with disabilities from the fourteen selected schools are included. The scores of kindergarten and grade one special education students could not be included in the analyses as state testing assessments are no longer administered within these grades. Students with missing data were excluded from the analyses. Because specific teachers, not schools, serving students in grades four through ten were the recipients of professional development services and training as part of the projects, data from all Delaware students with disabilities in these grades are included in this report.

Beginning in second grade, students participate annually in the Delaware Student Testing Program; they receive both a reading scale score and a corresponding reading performance level as part of the test results. Consequently, for students in second through tenth grade, mean reading scale scores and corresponding standard deviations are reported for each grade level. In addition, results for all grade levels are disaggregated by gender, race, income status, and English language learner status. However, when the number of students in a given group is less than fifteen, results are not presented in this report.<sup>2</sup>

Results from this component of the evaluation are discussed in the following section. The student achievement portion of the Delaware State Improvement Grant project evaluation plan is included in Appendix B.

#### STUDENT ACHIEVEMENT

Student achievement data from spring 2006 are summarized and reported with student achievement data from the baseline year of spring 2003, second year results from spring 2004, and third year results from spring 2005 for comparative purposes.

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<sup>2</sup> This is done to maintain the anonymity of the student participants.

## RESULTS PART A: SECOND AND THIRD GRADE

State reading achievement test scores were analyzed for all students receiving special education services in the fourteen targeted schools. Students with missing data were excluded from the analyses. The following section provides mean scale scores, standard deviations, and sample sizes for students from the spring 2003, 2004, 2005, and 2006 administrations of the reading portion of the Delaware Student Testing Program (DSTP). Scale scores are raw scores that have been converted to make scores in a given content area comparable when using different test forms as is done in the administration of the DSTP.

**Table 1: Mean Reading Achievement by Gender, Income Status, and English Language Learner Status for 2003, 2004, 2005, and 2006 Second Grade Cohorts**

Mean Reading Achievement Scores								
			Gender		Income Status		English Language Learner Status	
	SIG schools		Females	Males	Low Income	Not Low Income	ELL	Not ELL
<b>Scale Score</b>	2003	376.29	378.86	375.16	376.96	375.30	-	376.38
	2004	383.85	383.47	384.02	379.31	392.30	-	384.31
	2005	371.72	368.15	373.34	367.03	384.31	-	371.75
	2006	376.23	377.24	375.50	371.92	387.90	-	376.99
<b>Standard Deviation</b>	2003	37.93	41.82	36.22	37.33	39.09	-	38.12
	2004	38.43	39.21	38.29	36.08	41.52	-	38.64
	2005	37.31	38.74	36.69	35.16	40.30	-	37.58
	2006	45.33	48.17	43.35	43.36	48.78	-	45.26
<b>N</b>	2003	160	49	111	96	64	3	157
	2004	143	43	100	93	50	4	139
	2005	166	52	114	121	45	3	163
	2006	215	90	125	157	58	9	206

**Table 2: Mean Reading Achievement by Race for 2003, 2004, 2005 and 2006  
Second Grade Cohorts**

<b>Mean Reading Achievement Scores</b>							
			<b>Race</b>				
	SIG Schools		American Indian	African American	Asian	Hispanic	White
<b>Scale Score</b>	2003	376.29	-	376.32	-	-	378.27
	2004	383.85	-	377.49	-	-	389.87
	2005	371.72	-	363.26	-	-	385.64
	2006	376.23	-	368.48	-	364.07	388.4
<b>Standard Deviation</b>	2003	37.93	-	30.71	-	-	41.48
	2004	38.43	-	38.34	-	-	38.62
	2005	37.31	-	35.25	-	-	38.78
	2006	45.33	-	44.82	-	40.31	44.43
<b>N</b>	2003	160	1	66	-	11	82
	2004	143	0	59	1	7	76
	2005	166	1	94	0	13	58
	2006	215	0	115	1	15	84



**Table 3: Mean Reading Achievement Scores by Gender, Income Status, and English Language Learner Status for 2003, 2004, 2005, and 2006 Third Grade Cohorts**

Mean Reading Achievement Scores								
			Gender		Income Status		English Language Learner Status	
	SIG schools		Females	Males	Low Income	Not Low Income	ELL	Not ELL
Scale Score	2003	407.59	403.64	409.54	403.32	416.06	-	407.82
	2004	422.76	430.47	419.17	421.97	423.97	-	423.06
	2005	413.64	406.62	417.35	415.15	410.60	-	414.08
	2006	416.26	419.34	415.04	414.80	422.10	-	416.08
Standard Deviation	2003	34.77	31.79	36.10	35.04	32.86	-	34.79
	2004	34.69	29.24	36.51	35.36	33.83	-	34.53
	2005	34.53	32.31	35.24	33.08	37.41	-	34.64
	2006	32.29	31.03	32.80	30.62	38.07	-	32.66
N	2003	200	66	134	133	67	2	198
	2004	189	60	129	115	74	1	188
	2005	159	55	104	106	53	5	154
	2006	198	56	142	158	40	13	185

**Table 4: Mean Reading Achievement Scores by Race for 2003, 2004, 2005 and 2006  
Third Grade Cohorts**

Mean Reading Achievement Scores							
			Race				
	Selected Schools		American Indian	African American	Asian	Hispanic	White
<b>Scale Score</b>	2003	407.59	-	402.10	-	-	413.92
	2004	422.76	-	412.84	-	412.25	434.25
	2005	413.64	-	405.21	-	-	422.67
	2006	416.26	-	407.46	-	418.32	428.89
<b>Standard Deviation</b>	2003	34.77	-	36.28	-	-	31.75
	2004	34.69	-	33.57	-	33.40	32.72
	2005	34.53	-	33.71	-	-	31.77
	2006	32.29	-	32.38	-	27.86	28.00
<b>N</b>	2003	200	0	97	0	11	92
	2004	189	0	85	0	16	88
	2005	159	1	80	1	8	69
	2006	198	1	103	0	19	75

## RESULTS PART B: FOURTH - TENTH GRADE

State reading achievement tests were analyzed for all students receiving special education services in Delaware. Students with missing or invalid data were excluded from the analyses. The following section provides mean scale scores, standard deviations, and sample sizes for students on the spring 2003 2004, 2005, and 2006 administrations of the reading portion of the Delaware Student Testing Program (DSTP). Scale scores are raw scores that have been converted to make scores in a given content area comparable when using different forms as is done in the administration of the DSTP.

**Table 6: Mean Reading Achievement Scores by Gender, Income Status, and English Language Learner Status for 2003, 2004, 2005, and 2006  
Fourth Grade Special Education Students**

Mean Reading Achievement Scores								
			Gender		Income Status		English Language Learner Status	
			Females	Males	Low Income	Not Low Income	ELL	Not ELL
<b>Scale Score</b>	2003	440.81	443.28	439.56	430.77	451.59	435.24	440.90
	2004	444.27	444.30	444.25	436.84	451.66	429.29	444.48
	2005	443.60	442.84	444.01	435.98	450.68	425.83	444.11
	2006	440.30	438.30	441.39	435.17	447.04	430.03	440.70
<b>Standard Deviation</b>	2003	39.87	40.22	39.67	35.94	41.08	44.73	39.81
	2004	36.82	35.94	37.33	35.11	37.02	36.10	36.80
	2005	34.85	35.64	34.43	33.21	34.87	38.98	34.60
	2006	34.85	34.38	35.07	33.97	34.86	34.71	34.80
<b>N</b>	2003	1084	364	720	561	523	17	1067
	2004	1209	435	774	603	606	17	1192
	2005	1272	450	822	613	659	36	1236
	2006	1398	493	905	794	604	53	1345

**Table 7: Mean Reading Achievement Scores by Race for 2003, 2004, 2005, and 2006  
Fourth Grade Special Education Students**

Mean Reading Achievement Scores							
			Race				
			American Indian	African American	Asian	Hispanic	White
<b>Scale Score</b>	2003	440.81	-	427.10	-	434.04	451.46
	2004	444.27	-	430.86	-	437.30	453.84
	2005	443.60	-	431.61	426.15	437.47	452.58
	2006	440.30	-	430.14	-	436.65	447.94
<b>Standard Deviation</b>	2003	39.87	-	35.43	-	37.52	39.97
	2004	36.82	-	34.50	-	33.81	35.72
	2005	34.85	-	31.83	46.59	35.00	33.57
	2006	34.85	-	32.76	-	33.93	34.31
<b>N</b>	2003	1084	4	407	6	84	583
	2004	1209	6	424	6	110	663
	2005	1272	3	440	20	104	705
	2006	1398	3	519	13	118	745

**Table 8: Mean Reading Achievement Scores by Gender, Income Status, and English Language Learner Status for 2003, 2004, 2005, and 2006  
Fifth Grade Special Education Students**

Mean Reading Achievement Scores								
			Gender		Income Status		English Language Learner Status	
			Females	Males	Low Income	Not Low Income	ELL	Not ELL
<b>Scale Score</b>	2003	442.53	442.17	442.71	434.26	453.57	429.67	442.76
	2004	455.39	455.82	455.17	447.47	464.73	443.86	455.64
	2005	452.87	453.33	452.63	447.06	459.98	440.06	453.20
	2006	455.43	456.77	454.70	449.78	463.11	443.43	455.83
<b>Standard Deviation</b>	2003	39.13	38.44	39.49	36.11	40.30	29.02	39.26
	2004	35.75	35.90	35.69	34.92	34.46	35.01	35.74
	2005	35.13	33.36	36.04	33.55	35.73	38.26	35.00
	2006	34.30	33.75	34.59	32.87	34.73	32.16	34.30
<b>N</b>	2003	1394	466	928	797	597	24	1370
	2004	1373	460	913	743	630	29	1344
	2005	1398	483	915	769	629	35	1363
	2006	1429	504	925	823	606	46	1383

**Table 9: Mean Reading Achievement Scores by Race for 2003, 2004, 2005, and 2006  
Fifth Grade Special Education Students**

Mean Reading Achievement Scores							
			Race				
			American Indian	African American	Asian	Hispanic	White
<b>Scale Score</b>	2003	442.53	-	429.47	-	431.11	455.01
	2004	455.39	-	445.33	-	448.66	464.72
	2005	452.87	-	442.57	-	447.61	462.29
	2006	455.43	-	447.74	451.94	451.50	462.43
<b>Standard Deviation</b>	2003	39.13	-	33.48	-	27.20	40.62
	2004	35.75	-	34.02	-	33.21	35.09
	2005	35.13	-	33.10	-	33.16	34.52
	2006	34.30	-	32.87	45.50	31.72	34.24
<b>N</b>	2003	1394	1	578	9	115	691
	2004	1373	5	563	11	117	677
	2005	1398	5	563	8	133	689
	2006	1429	6	566	18	130	709

**Table 10: Mean Reading Achievement Scores by Gender, Income Status, and English Language Learner Status for 2003, 2004, 2005, and 2006 Sixth Grade Special Education Students**

Mean Reading Achievement Scores								
			Gender		Income Status		English Language Learner Status	
			Females	Males	Low Income	Not Low Income	ELL	Not ELL
Scale Score	2003	437.81	437.90	436.60	430.67	445.67	-	437.15
	2004	444.10	447.31	442.31	437.26	451.59	-	444.20
	2005	450.54	453.56	449.02	444.83	456.56	423.89	450.99
	2006	448.14	451.43	446.41	442.93	445.50	441.76	448.31
Standard Deviation	2003	40.81	38.41	41.97	38.39	42.38	-	40.85
	2004	42.39	41.70	42.72	41.04	42.67	-	42.52
	2005	36.29	34.43	37.11	34.51	37.17	32.42	36.19
	2006	32.89	30.14	34.15	32.06	32.68	30.35	32.95
N	2003	926	305	621	517	409	13	913
	2004	1051	373	677	550	500	14	1036
	2005	1067	356	711	548	519	18	1049
	2006	1314	455	859	769	545	33	1281



**Table 11: Mean Reading Achievement Scores by Race for 2003, 2004, 2005 and 2006  
Sixth Grade Special Education Students**

Mean Reading Achievement Scores							
			Race				
			American Indian	African American	Asian	Hispanic	White
<b>Scale Score</b>	2003	437.81	-	422.13	-	436.36	449.52
	2004	444.10	-	429.74	-	429.95	457.61
	2005	450.54	-	439.74	-	442.58	459.99
	2006	448.14	-	439.29	-	442.87	456.68
<b>Standard Deviation</b>	2003	40.81	-	35.70	-	36.31	41.23
	2004	42.39	-	39.21	-	35.22	41.49
	2005	36.29	-	35.62	-	36.37	34.13
	2006	32.89	-	31.39	-	31.05	32.43
<b>N</b>	2003	926	4	394	2	67	459
	2004	1051	1	429	8	79	533
	2005	1067	3	419	7	89	549
	2006	1314	3	531	8	134	638

**Table 12: Mean Reading Achievement Scores by Gender, Income Status, and English Language Learner Status for 2003, 2004, 2005, and 2006 Seventh Grade Special Education Students**

Mean Reading Achievement Scores								
			Gender		Income Status		English Language Learner Status	
			Females	Males	Low Income	Not Low Income	ELL	Not ELL
<b>Scale Score</b>	2003	448.85	447.93	449.34	441.74	458.60	426.44	449.11
	2004	454.16	453.64	454.45	448.45	460.61	-	454.16
	2005	458.91	461.11	457.77	453.54	465.27	447.36	459.16
	2006	457.15	461.89	455.01	451.28	465.02	435.50	457.76
<b>Standard Deviation</b>	2003	35.93	34.66	36.61	32.65	37.92	27.27	35.95
	2004	36.57	33.99	37.84	34.44	37.86	-	36.61
	2005	32.73	32.01	33.06	31.06	33.53	31.18	32.73
	2006	33.45	31.87	33.95	32.26	33.44	24.12	33.48
<b>N</b>	2003	1362	478	884	788	574	16	1346
	2004	1290	432	856	681	607	7	1281
	2005	1335	457	878	724	611	28	1307
	2006	1320	411	909	756	564	36	1284

**Table 13: Mean Reading Achievement Scores by Race for 2003, 2004, 2005, and 2006  
Seventh Grade Special Education Students**

Mean Reading Achievement Scores							
			Race				
			American Indian	African American	Asian	Hispanic	White
<b>Scale Score</b>	2003	448.85	-	437.09	-	439.49	460.46
	2004	454.16	-	442.86	-	448.08	465.27
	2005	458.91	-	449.99	-	451.12	468.56
	2006	457.15	-	448.27	-	447.51	466.59
<b>Standard Deviation</b>	2003	35.93	-	31.71	-	34.88	36.04
	2004	36.57	-	31.26	-	35.42	38.01
	2005	32.73	-	29.52	-	30.58	33.23
	2006	33.45	-	30.02	-	31.86	34.13
<b>N</b>	2003	1362	6	590	3	96	667
	2004	1290	5	564	5	99	615
	2005	1335	1	587	7	115	625
	2006	1320	7	570	11	111	621

**Table 14: Mean Reading Achievement Scores by Gender, Income Status, and English Language Learner Status for 2003, 2004, 2005 and 2006  
Eighth Grade Special Education Students**

Mean Reading Achievement Scores								
			Gender		Income Status		English Language Learner Status	
			Females	Males	Low Income	Not Low Income	ELL	Not ELL
<b>Scale Score</b>	2003	475.67	479.73	473.5	471.40	480.85	469.50	475.76
	2004	479.47	482.00	478.10	472.42	487.54	463.48	479.72
	2005	484.38	486.14	483.42	479.30	489.82	463.80	484.76
	2006	481.79	485.70	479.77	476.38	489.23	466.28	482.16
<b>Standard Deviation</b>	2003	35.13	34.72	35.18	34.17	35.61	24.75	35.26
	2004	35.40	34.05	36.06	33.16	36.17	31.99	35.40
	2005	34.03	32.17	34.98	31.90	35.40	27.22	34.03
	2006	36.23	35.67	36.38	34.79	36.89	30.97	36.28
<b>N</b>	2003	1524	526	998	836	688	22	1502
	2004	1478	519	959	789	689	23	1455
	2005	1376	485	891	712	664	25	1351
	2006	1370	466	904	793	577	32	1338

**Table 15: Mean Reading Achievement Scores by Race for 2003, 2004, 2005, and 2006  
Eighth Grade Special Education Students**

Mean Reading Achievement Scores							
			Race				
			American Indian	African American	Asian	Hispanic	White
<b>Scale Score</b>	2003	475.67	-	466.82	-	470.41	483.63
	2004	479.47	-	469.93	-	468.29	489.50
	2005	484.38	-	474.76	-	482.61	492.99
	2006	481.79	-	471.76	-	477.96	492.37
<b>Standard Deviation</b>	2003	35.13	-	33.64	-	31.91	34.85
	2004	35.40	-	33.19	-	34.22	34.74
	2005	34.03	-	32.20	-	32.67	33.51
	2006	36.23	-	33.19	-	34.40	36.58
<b>N</b>	2003	1524	4	646	3	101	770
	2004	1478	4	632	5	110	727
	2005	1376	9	594	6	114	653
	2006	1370	1	619	7	114	629

**Table 16: Mean Reading Achievement Scores by Gender, Income Status, and English Language Learner Status for 2003, 2004, 2005, and 2006  
Ninth Grade Special Education Students**

Mean Reading Achievement Scores								
			Gender		Income Status		English Language Learner Status	
			Females	Males	Low Income	Not Low Income	ELL	Not ELL
<b>Scale Score</b>	2003	461.44	460.60	461.84	451.79	471.25	-	461.81
	2004	468.58	473.76	466.00	461.21	475.88	-	468.71
	2005	468.65	468.74	468.60	460.72	476.74	443.29	469.13
	2006	471.53	476.03	469.09	465.20	478.56	461.30	471.73
<b>Standard Deviation</b>	2003	39.33	36.88	40.47	35.88	40.27	-	39.16
	2004	37.94	36.94	38.14	36.67	37.81	-	37.91
	2005	39.10	38.82	39.25	37.40	39.17	28.53	39.12
	2006	37.71	34.43	39.17	36.32	38.00	31.36	37.80
<b>N</b>	2003	1065	344	721	544	521	7	1058
	2004	1294	435	855	639	651	4	1286
	2005	1289	420	869	651	638	24	1265
	2006	1415	497	918	745	670	27	1388

**Table 17: Mean Reading Achievement Scores by Race for 2003, 2004, 2005 and 2006  
Ninth Grade Special Education Students**

Mean Reading Achievement Scores							
			Race				
			American Indian	African American	Asian	Hispanic	White
<b>Scale Score</b>	2003	461.44	-	450.23	-	442.68	475.07
	2004	468.58	-	457.19	-	455.14	480.14
	2005	468.65	-	456.51	-	461.46	480.43
	2006	471.53	-	459.96	-	472.93	482.13
<b>Standard Deviation</b>	2003	39.33	-	33.27	-	43.65	40.07
	2004	37.94	-	35.25	-	40.45	36.37
	2005	39.10	-	35.05	-	39.94	38.95
	2006	37.71	-	34.08	-	35.79	38.15
<b>N</b>	2003	1065	-	514	6	59	485
	2004	1294	4	580	0	65	641
	2005	1289	2	568	3	78	638
	2006	1415	7	640	7	113	648

**Table 18: Mean Reading Achievement Scores by Gender, Income Status, and English Language Learner Status for 2003, 2004, 2005 and 2006  
Tenth Grade Special Education Students**

Mean Reading Achievement Scores								
			Gender		Income Status		English Language Learner Status	
			Females	Males	Low Income	Not Low Income	ELL	Not ELL
<b>Scale Score</b>	2003	460.79	462.02	460.00	450.74	469.47	-	460.99
	2004	464.15	463.84	464.30	456.47	469.38	-	464.15
	2005	468.45	474.08	465.24	461.12	474.96	-	468.70
	2006	470.90	473.66	469.47	464.94	476.22	-	471.15
<b>Standard Deviation</b>	2003	35.98	32.36	38.13	32.68	36.47	-	36.02
	2004	35.17	31.78	36.82	31.32	36.70	-	35.17
	2005	34.01	35.27	32.88	30.76	35.44	-	33.95
	2006	34.81	34.91	34.70	32.13	36.25	-	34.63
<b>N</b>	2003	930	363	567	431	499	9	921
	2004	718	243	475	291	427	0	718
	2005	836	304	532	393	443	13	823
	2006	901	308	593	425	476	12	889



**Table 19: Mean Reading Achievement Scores by Race for 2003, 2004, 2005, and 2006  
Tenth Grade Special Education Students**

Mean Reading Achievement Scores							
			Race				
			American Indian	African American	Asian	Hispanic	White
Scale Score	2003	460.79	-	448.68	-	445.39	473.42
	2004	464.15	-	451.85	-	449.43	474.97
	2005	468.45	-	457.64	-	462.04	478.58
	2006	470.90	-	458.14	-	463.96	480.93
Standard Deviation	2003	35.98	-	31.67	-	37.09	34.88
	2004	35.17	-	30.63	-	33.08	35.20
	2005	34.01	-	31.59	-	29.68	33.57
	2006	34.81	-	30.50	-	40.25	34.01
N	2003	930	4	413	6	57	450
	2004	718	0	309	5	28	376
	2005	836	3	368	2	47	416
	2006	901	2	358	3	52	486

## ANOVA RESULTS

To investigate if the 2006 reading scale scores of the students receiving special education services attending a SIG school in 2<sup>nd</sup> and 3<sup>rd</sup> grade significantly differed from the reading scale scores from 2003, 2004, and 2005, several analysis of variances (ANOVAS) were conducted. Additionally, ANOVAS were performed on the mean reading scale scores of all the students receiving special education services in 4<sup>th</sup> through 10<sup>th</sup> grade, comparing mean reading scale scores in 2006 with scores from 2003, 2004, and 2005. ANOVA results for grades 2 to 10 are expressed in table 20.

Supplementary ANOVAS were performed on the mean reading scores of the students receiving special education services in 2<sup>nd</sup> through 10<sup>th</sup> grade by race for African-American and White students. Analyses for other races could not be conducted due to the small sample sizes. Further, the mean reading scores by low income students and by gender were also analyzed. An ANOVA for English language learners could not be conducted due to the small sample size. Results for grades 2 to 10 are expressed in tables 21 through 25.

Significant ANOVA results were analyzed for effect size using the  $\omega$  statistic. If  $\omega$  is greater than .50, then there is a large effect and if below .50, there is a small effect<sup>3</sup>. All of the effects were small.

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<sup>3</sup> Field, A. (2005). *Discovering statistics using SPSS* (2<sup>nd</sup> ed.). London, UK: Sage.

**Table 20: Reading Scale Score ANOVA Results for 2003, 2004, and 2005 by Grade**

Mean Reading Achievement Scores								
Grade	2003	2004	2005	2006	F (df)	p value*	Effect Size	Significant differences
2	M=376 SD=38	M=384 SD=38	M=372 SD=37	M=376 SD=45	2.64 (3,369)	.049*	.08	2004>2005
3	M=408 SD=35	M=423 SD=35	M=414 SD=35	M=416 SD=32	6.60 (3,742)	.000*	.15	2004>2003
4	M=441 SD=40	M=444 SD=37	M=444 SD=35	M=440 SD=35	3.77 (3,2690)	.010*	.04	2004>2006
5	M=443 SD=39	M=455 SD=36	M=453 SD=35	M=455 SD=34	36.35 (3,3100)	.000*	.14	2004, 2005, 2006>2003
6	M=438 SD=41	M=444 SD=42	M=451 SD=36	M=448 SD=33	23.04 (3,2297)	.000*	.13	2004, 2005, 2006>2003 2005>2004
7	M=449 SD=36	M=454 SD=37	M=459 SD=33	M=457 SD=33	21.70 (3,2940)	.000*	.11	2004,2005,2006 > 2003 2005 > 2004
8	M=476 SD=35	M=479 SD=35	M=484 SD=34	M=482 SD=36	16.01 (3,5774)	.000*	.09	2004, 2005, 2006 > 2003 2005 > 2004
9	M=461 SD=39	M=469 SD=38	M=469 SD=39	M=472 SD=38	14.49 (3,5059)	.000*	.09	2004, 2005, 2006 > 2003
10	M=461 SD=36	M=464 SD=35	M=468 SD=34	M=471 SD=35	14.77 (3,3381)	.000*	.11	2005, 2006 > 2003 2006 > 2004

All grades show some significant differences across 2003, 2004, 2005, and 2006. The mean reading scale scores of students receiving special education services in fifth to tenth grade are significantly higher than 2003 scores. Students in ninth and tenth grade mean reading scale scores were higher than in the past three years. Only fourth grade shows a statistically significant decrease in their reading scale scores from 2004 to 2006.

\* All p values with an asterisk indicate statistical significance.

**Table 21: Reading Scale Score ANOVA Results for African-American Students Receiving Special Education Services**

Mean Reading Achievement Scores								
Grade	2003	2004	2005	2006	F df	P value*	Effect Size	Significant differences
2	M=376 SD=31	M=377 SD=38	M=363 SD=35	M=368 SD=45	2.51 (3,302)	.059		
3	M=402 SD=36	M=413 SD=34	M=405 SD=34	M=407 SD=32	1.58 (3,361)	.194		
4	M=427 SD=35	M=431 SD=35	M=432 SD=32	M=430 SD=33	1.45 (3,1786)	.228		
5	M=429 SD=33	M=445 SD=34	M=443 SD=33	M=448 SD=33	34.23 (3,2266)	.000*	.21	2004, 2005, 2006>2003 2006>2005
6	M=422 SD=36	M=430 SD=39	M=440 SD=36	M=439 SD=31	24.81 (3,946)	.000*	.19	2004, 2005, 2006>2003 2005, 2006>2004
7	M=437 SD=32	M=443 SD=31	M=450 SD=30	M=448 SD=30	21.19 (3,2307)	.000*	.16	2006, 2005 > 2004 > 2003
8	M=467 SD=34	M=470 SD=33	M=475 SD=32	M=472 SD=33	6.27 (3,2487)	.000*	.08	2005, 2006 > 2003
9	M=450 SD=33	M=457 SD=35	M=457 SD=35	M=460 SD=34	7.87 (3,2299)	.000*	.09	2004, 2005, 2006 > 2003
10	M=449 SD=32	M=452 SD=31	M=458 SD=32	M=458 SD=30	8.29 (3,1444)	.000*	.12	2005, 2006 > 2003 2006 > 2004

African-American students receiving special education services showed a significant increase in mean reading scale scores between 2003 and 2006 in fifth through tenth grades. There were no significant differences found for the mean reading scale scores for students in second, third and fourth grade.

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\* All p values with an asterisk indicate statistical significance.

**Table 22: Reading Scale Score ANOVA Results for White Students  
Receiving Special Education Services**

Mean Reading Achievement Scores								
Grade	2003	2004	2005	2006	F df	p value*	Effect Size	Significant differences
2	M=378 SD=41	M=390 SD=39	M=386 SD=39	M=388 SD=44	1.27 (3,296)	.285	.	
3	M=414 SD=32	M=434 SD=33	M=423 SD=32	M=429 SD=28	6.96 (3,320)	.000*	.23	2004, 2006>2003
4	M=451 SD=40	M=454 SD=36	M=453 SD=34	M=448 SD=34	3.84 (3,1458)	.009*	.05	2004>2006
5	M=455 SD=41	M=465 SD=35	M=462 SD=35	M=462 SD=34	8.07 (3,1530)	.000*	.09	2004, 2005, 2006>2003
6	M=450 SD=41	M=458 SD=41	M=460 SD=34	M=457 SD=32	6.42 (3,1152)	.000*	.09	2004, 2005, 2006>2003
7	M=460 SD=36	M=465 SD=38	M=469 SD=33	M=467 SD=34	6.29 (3,1398)	.000*	.08	2005, 2006 > 2003
8	M=484 SD=35	M=490 SD=35	M=493 SD=34	M=492 SD=37	10.83 (3,2775)	.000*	.10	2004, 2005, 2006 > 2003
9	M=475 SD=40	M=480 SD=36	M=480 SD=39	M=482 SD=38	3.33 (3,2408)	.019*	.05	2006 > 2003
10	M=473 SD=35	M=475 SD=35	M=479 SD=34	M=481 SD=34	4.47 (3,1724)	.004*	.08	2006 > 2003

White students receiving special education services showed a significant increase in mean reading scale scores between 2003 and 2006 in grade 3 and grades 5 to 8. Students in 4<sup>th</sup> grade scored significantly lower reading scale scores in 2006 then their peers in 2004.

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\* All p values with an asterisk indicate statistical significance.

**Table 23: Reading Scale Score ANOVA Results for Low Income Students  
Receiving Special Education Services**

Mean Reading Achievement Scores								
Grade	2003	2004	2005	2006	F df	p value*	Effect Size	Significant differences
2	M=377 SD=37	M=379 SD=36	M=367 SD=35	M=372 SD=43	2.49 (3,242)	.061		
3	M=403 SD=35	M=422 SD=35	M=415 SD=33	M=415 SD=31	6.75 (3,508)	.000*	.18	2004, 2005, 2006>2003
4	M=431 SD=36	M=437 SD=35	M=436 SD=33	M=435 SD=34	3.53 (3,2567)	.014*	.05	2004, 2005>2003
5	M=434 SD=36	M=447 SD=35	M=447 SD=34	M=450 SD=33	31.45 (3,1731)	.000*	.17	2004, 2005, 2006>2003
6	M=431 SD=38	M=437 SD=41	M=445 SD=35	M=443 SD=32	16.68 (3,1235)	.000*	.14	2005,2006 >2004> 2003
7	M=442 SD=33	M=448 SD=34	M=454 SD=31	M=451 SD=32	19.41 (3,1624)	.000*	.13	2004, 2005, 2006 > 2003 2005 > 2004
8	M=471 SD=34	M=472 SD=33	M=479 SD=32	M=476 SD=35	9.03 (3, 3126)	.000*	.09	2005, 2006 > 2003 2005 > 2004
9	M=452 SD=36	M=461 SD=37	M=461 SD=37	M=465 SD=36	14.44 (3,2575)	.000*	.12	2004, 2005, 2006 > 2003
10	M=451 SD=33	M=457 SD=31	M=461 SD=31	M=465 SD=32	15.66 (3,1536)	.000*	.17	2005, 2006 > 2003 2006 > 2004

Low income students receiving special education services showed a significant increase in mean reading scale scores between 2003 and 2006 in grade 3 and grades 5 through 10. In addition, students in grades 5, 9 and 10 outperformed the prior three years of reading scale scores.

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\* All p values with an asterisk indicate statistical significance.

**Table 24: Reading Scale Score ANOVA Results for Male Students  
Receiving Special Education Services**

Mean Reading Achievement Scores								
Grade	2003	2004	2005	2006	F df	p value*	Effect Size	Significant differences
2	M=375 SD=36	M=384 SD=38	M=373 SD=37	M=376 SD=43	1.56 (3,446)	.198		
3	M=410 SD=36	M=419 SD=37	M=417 SD=35	M=415 SD=33	1.84 (3,505)	.139		
4	M=440 SD=40	M=444 SD=37	M=444 SD=34	M=441 SD=35	**	**		
5	M=443 SD=39	M=455 SD=36	M=453 SD=36	M=455 SD=35	21.40 (3,2041)	.000*	.13	2004, 2005, 2006 > 2003
6	M=437 SD=42	M=442 SD=43	M=449 SD=37	M=446 SD=34	12.32 (3,1519)	.000*	.11	2005, 2006 > 2003 2005 > 2004
7	M=449 SD=37	M=454 SD=38	M=458 SD=33	M=455 SD=34	8.76 (3,1951)	.000*	.08	2004, 2005, 2006 > 2003
8	M=474 SD=35	M=478 SD=36	M=483 SD=35	M=480 SD=36	12.54 (3,3748)	.000*	.10	2004, 2005, 2006 > 2003 2005 > 2004
9	M=462 SD=40	M=466 SD=38	M=469 SD=39	M=469 SD=39	5.60 (3,3359)	.001*	.06	2005, 2006 > 2003
10	M=460 SD=38	M=464 SD=37	M=465 SD=33	M=469 SD=35	6.58 (3,1184)	.000*	.09	2006 > 2003

Although male students receiving special education services had no significant increases in mean reading scale scores in grades 2 to 4, there was a significant increase between 2003 and 2006. Grades 5 and 10 showed the highest reading scale scores achieved since 2003.

\* All p values with an asterisk indicate statistical significance.

\*\* Due to contradictory results, these analyses are not interpretable.

**Table 25: Reading Scale Score ANOVA Results for Female Students  
Receiving Special Education Services**

Mean Reading Achievement Scores								
Grade	2003	2004	2005	2006	F df	p value*	Effect Size	Significant differences
2	M=379 SD=42	M=383 SD=39	M=368 SD=39	M=377 SD=48	1.07 (3,230)	.363		
3	M=404 SD=32	M=430 SD=29	M=407 SD=32	M=419 SD=31	9.57 (3,233)	.000*	.31	2004, 2006>2003 2004>2005
4	M=443 SD=40	M=444 SD=36	M=443 SD=36	M=438 SD=34	2.47 (3,1613)	.060		
5	M=442 SD=38	M=456 SD=36	M=453 SD=33	M=457 SD=34	15.30 (3,1054)	.000*	.16	2004, 2005, 2006>2003
6	M=438 SD=38	M=447 SD=42	M=454 SD=34	M=451 SD=30	11.75 (3,773)	.000*	.15	2004, 2005, 2006 > 2003
7	M=448 SD=35	M=454 SD=34	M=461 SD=32	M=462 SD=32	18.06 (3,1774)	.000*	.17	2005, 2006 > 2004 > 2003
8	M=480 SD=35	M=482 SD=34	M=486 SD=32	M=486 SD=36	4.05 (3,1992)	.007*	.07	2005, 2006 > 2003
9	M=461 SD=37	M=474 SD=37	M=469 SD=39	M=476 SD=34	13.57 (3,1692)	.000*	.15	2004, 2005, 2006 > 2003
10	M=462 SD=32	M=464 SD=32	M=474 SD=35	M=474 SD=35	11.23 (3,1214)	.000*	.16	2005, 2006 > 2003, 2004

Female students receiving special education services showed a significant increase in mean reading scales scores between 2003 and 2006 in grades 3 and 5 to 10.

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\* All p values with an asterisk indicate statistical significance.



## RESULTS PART D: PERFORMANCE LEVELS

In prior years, state reading achievement performance levels were analyzed for all students in second and third grade receiving special education services who participated in the targeted schools and for all students in grades 4-10 receiving special education services in Delaware. This year, due to changes in the cut scores for 2006, performance levels were not analyzed.

## APPENDIX A: DEMOGRAPHIC INFORMATION

**DELAWARE STATE IMPROVEMENT GRANT**  
**DEMOGRAPHIC INFORMATION OF STUDENTS RECEIVING SPECIAL EDUCATION SERVICES**  
**IN GRADES KINDERGARTEN – 10<sup>TH</sup>**  
FOR 2003, 2004, 2005, AND 2006

- ☑ From 2003 to 2006, the number of students identified as English Language Learners receiving special education services has nearly doubled; an increase was noted in each grade level, K-10.
- ☑ From 2003 to 2006, the number of students retained in grade has decreased in K through grade 8.
- ☑ Over the past four years, the percentage of students receiving special education services who were eligible for Free/reduced price lunch remained fairly constant: 2003= 53%, 2004 =48%, 2005= 50%, and 2006= 55%.

GRADE LEVELS INVOLVED	YEAR	K	1	2	3	4	5	6	7	8	9	10	TOTAL
Number of Students <sup>4</sup>	2003	940	1225	1365	1426	1402	1395	1259	1379	1539	1246	950	14126
	2004	1130	1382	1372	1558	1562	1515	1486	1434	1633	1702	987	15761
	2005	1165	1420	1468	1476	1558	1516	1434	1511	1547	1719	1105	15919
	2006	1171	1396	1464	1579	1491	1536	1467	1459	1569	1651	1176	15959
Number of Female Students	2003	306	392	460	499	487	466	424	485	529	406	372	4826
	2004	358	434	451	543	556	504	511	477	568	566	322	5290
	2005	352	432	471	507	551	529	472	524	532	562	396	5328
	2006	329	389	481	510	518	540	501	461	537	558	399	5223
Number of Male Students	2003	634	833	905	927	915	929	835	894	1010	840	578	9300
	2004	772	948	921	1015	1006	1011	975	957	1065	1702	665	13471
	2005	813	988	997	969	1007	987	962	987	1015	1157	709	10591
	2006	842	1007	983	1069	973	996	966	998	1032	1093	777	10736

<sup>4</sup> Number of students within this demographic table differs from number of students referenced with valid DSTP reading scores due to missing data

<b>GRADE LEVELS INVOLVED</b>	<b>YEAR</b>	<b>K</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>TOTAL</b>
Number of Caucasian Students	2003	573	733	787	772	729	691	605	673	775	590	460	7388
	2004	637	776	781	844	813	749	731	686	809	832	487	8145
	2005	654	746	807	811	816	753	710	722	735	861	537	8152
	2006	671	781	759	815	790	766	722	694	733	752	612	8095
Number of African American Students	2003	269	371	459	521	546	579	551	598	656	583	423	5556
	2004	377	452	457	559	589	621	615	621	692	770	448	6201
	2005	383	509	492	521	568	609	586	647	663	740	500	6218
	2006	364	466	546	579	556	596	590	622	688	751	489	6247
Number of Hispanic Students	2003	86	99	105	120	115	115	95	99	101	66	57	1058
	2004	97	136	118	130	145	127	129	113	122	94	43	1254
	2005	103	138	152	123	143	140	120	132	129	111	59	1350
	2006	117	126	135	168	126	145	143	122	135	131	70	1418
Number of Asian American Students	2003	11	18	10	8	8	9	4	3	3	6	6	86
	2004	17	9	16	23	9	13	10	9	6	2	8	122
	2005	21	23	11	18	26	9	12	9	10	4	6	149
	2006	18	19	19	13	16	23	9	14	11	10	3	155
Number of Native American Students	2003	1	4	4	5	4	1	4	6	4	1	4	38
	2004	2	9	0	2	6	5	1	5	4	4	1	39
	2005	4	4	6	3	5	5	6	1	10	3	3	50
	2006	1	4	5	4	3	6	3	7	2	7	2	44

<b>GRADE LEVELS INVOLVED</b>	<b>YEAR</b>	<b>K</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>TOTAL</b>
Number of Students Receiving Title I Services (Reading, Math, or Both)	2003	160	230	181	211	159	158	79	100	99	11	7	1395
	2004	169	261	174	177	154	181	144	64	75	16	11	1426
	2005	151	233	196	185	154	155	84	77	47	30	21	1333
	2006	96	205	238	203	157	134	100	59	45	11	22	1270
Number of Students identified as English Language Learners	2003	38	43	39	28	28	24	18	16	22	8	9	273
	2004	38	28	29	31	24	32	21	11	26	7	0	247
	2005	59	71	68	57	44	37	29	31	29	31	13	469
	2006	63	88	80	93	55	51	39	40	39	30	20	598
Number of Students eligible for the Free/reduced Lunch Program	2003	391	614	674	783	754	798	721	802	845	635	438	7455
	2004	413	626	640	741	791	798	773	742	861	818	411	7614
	2005	517	704	760	727	766	821	747	804	799	845	508	7998
	2006	554	767	791	947	833	870	847	830	889	873	584	8785
Number of students retained in grade	2003	(No Data)	-	-	-	-	-	-	-	-	-	-	-
	2004	125	208	90	75	58	57	47	76	212	-	-	901
	2005	91	186	71	61	24	30	45	70	169	-	-	747
	2006	112	183	69	46	22	30	27	44	122	-	-	655

**DELAWARE STATE IMPROVEMENT GRANT  
RETENTION INFORMATION OF STUDENTS RECEIVING SERVICES  
IN GRADES KINDERGARTEN – 8<sup>TH</sup>  
FOR 2004 AND 2005**

	GRADE LEVELS INVOLVED								
	K	1	2	3	4	5	6	7	8
2004	11.06	15.05	6.55	4.81	3.71	3.76	3.16	5.29	12.98
2005	7.81	13.10	4.84	4.13	1.54	1.98	3.14	4.63	10.92
2006	9.60	13.10	4.70	2.90	1.50	2.00	1.80	3.00	7.80

**Percent of Students Retained in Grade**

## APPENDIX B: EVALUATION PLAN

### Evaluation Plan for State Improvement Grant (SIG) Workscope for the University of Delaware Education Research and Development Center

This proposal is intended to specifically delineate the evaluation activities attendant to the federally-supported initiative, the State Improvement Grant of the State of Delaware. The evaluation has been conceptualized based on the state proposal and subsequent meetings with state SIG personnel.

#### Outcome Evaluation Component of the State Improvement Grant (SIG)

The outcome evaluation is designed to examine the impact of the wide range of intervention activities proposed within the State Improvement Grant. It focuses primarily on the two major terminal goals that address achievement and inclusion of Delaware students with disabilities.

Goal 1: Improved literacy and reading skills for children with disabilities in three age groups: preschool, kindergarten through 3<sup>rd</sup> grade, and grades 4 through 12. (Achievement)

Goal 2: All students with mild and moderate disabilities will gain access to and progress in the general curriculum. (Inclusion)

The SIG is designed to bring about changes at all levels of the educational system over time. Consequently, the outcome evaluation has been designed to examine impact at multiple levels over the five-year period of the grant. Intermediate goals of the SIG focus on changes at the following levels:

- The student level,
- The teacher/classroom level,
- The school level,
- The level of parents and families, and
- The system or state level.

STUDENT ACHIEVEMENT						
FOCUS	OBJECTIVE	MEASURES	03-04	04-05	05-06	06-07
k-3 Students	The reading skills of 80% of the k-3 students with disabilities will be enhanced within the lowest performing schools selected annually.	Analysis of DSTP (grades 2-3)  Analysis of DDOE database to determine % of students retained in grade.	◆	◆	◆	◆
4-12 Students	The reading skills of 70% of the children with disabilities in grades 4-12 will be enhanced.	Analysis of DSTP (grades 4-10)  Analysis of DDOE database to determine % of students retained in grade.	◆	◆	◆	◆
4-12 Students	The reading skills of struggling readers in grades 4-12 will be enhanced.	Analysis of Diagnostic Assessments of Reading (DAR) on a random sample of struggling readers <sup>5</sup>			◆	◆

<sup>5</sup> Data will be collected by classroom teachers in the fall and spring of each year. Data will be analyzed at the state level and reported in a separate document. This data will be reported for formative purposes and will not be analyzed as part of the annual outcome evaluation report.