

EFFECTIVENESS OF THE
GrapeSEED
English Language Program
FOR PRESCHOOL-K-2 STUDENTS

**BASED ON THE 2011-14
RESEARCH FINDINGS BY:**

Dr. Julia Smith, Ph. D.,
Professor & Ph. D. Coordinator,
Educational Leadership
Department at
Oakland University

Dr. Judith Smith, Ph. D.,
Program evaluation, literacy,
behavior management
at the University of Michigan



TABLE OF CONTENTS

About GrapeSEED	5
About the Research Studies	5
At-Risk Preschool Assessment: CELF	6
About the Assessment (Berrien RESA GSRP)	7
About CELF	8
Expressive Vocabulary	9
Phonological Awareness	10
Recalling Sentences	11
Word Structure	11
Sentence Structure	12
Summary of Results	13
K-1-2 ELL Assessment: WIDA	14
About the Assessment (Berrien Springs Schools)	14
About WIDA	15
Listening Skills	16
Speaking Skills	17
Reading Skills	18
Oral Language	19
Summary of Results	20
At-Risk Kindergarten Assessments: DRA, MLPP	21
About the Assessment (Clintondale Community Schools)	21
About DRA	22
DRA Text Level	23
Three Years of Kindergarten Results	25
About MLPP	26
MLPP Expressive Growth	26
MLPP Hearing and Recording Sounds	26
MLPP Sight Word/Decodable Word List	27
MLPP Concepts about Print	28
MLPP Oral Language Expressive	29
MLLP Hearing and Recording Sounds in Words	29
Absenteeism Impact	30
Summary of Results	30
Kindergarten Assessments: DRA, MLPP	31
About the Assessment (Berrien Springs Schools)	31
About DRA	32
Distribution of GrapeSEED in Preschool and Kindergarten	32
DRA Scores from Fall to Spring	33
DRA Text Level by Year (cohort)	35
Demographics	36
Summary of Results	36
At-Risk Grade 1 Assessments: DRA, MLPP	37
About the Assessment (Clintondale Community Schools)	37
About DRA	38
DRA Text Level	39
DRA Comprehension Rubric	40
About MLPP	41
MLPP Known Words	41
MLPP Concepts about Print	42
MLPP Hearing and Recording Sounds	42
Absenteeism Impact	43
Summary of Results	43
At-Risk Grade 2 Duration: 3 Years Assessment: DRA	44
About the Assessment (Clintondale Community Schools)	44
Do Gains Carry Over into Higher Grades	44
About DRA	45
Gains Carry Over into Higher Grades	46
Conclusions	47

TABLE OF FIGURES

FIGURE 1: Ethnic Differences in Growth Pattern in Expressive Vocabulary Skills	9
FIGURE 2: English Language Status Differences in Growth Pattern in Expressive Vocabulary Skills.....	9
FIGURE 3: Ethnic Differences in Growth Pattern in Phonological Awareness Skills.....	10
FIGURE 4: English Language Status Differences in Growth Pattern in Phonological Awareness Skills	10
FIGURE 5: Age Group Status Differences in Growth Pattern in Phonological Awareness Skills	10
FIGURE 6: Free/Reduced Lunch Status Differences in Growth Pattern in Recalling Sentences	11
FIGURE 7: Ethnic Differences in Growth Pattern in Word Structure	11
FIGURE 8: English Language Status Differences in Growth Pattern in Word Structure	11
FIGURE 9: Ethnic Differences in Growth Pattern in Sentence Structure.....	12
FIGURE 10: English Language Status Differences in Growth Pattern in Sentence Structure	12
FIGURE 11: Free/Reduced Lunch Status Differences in Growth Pattern in Sentence Structure	12
FIGURE 12: Change in Average Score for Each Assessment.....	13
FIGURE 13: Change in Percent of Students Performing At or Above Their Age Norms	13
FIGURE 14: WIDA Proficiency Levels	15
FIGURE 15: Full Sample Percent Reaching Proficiency Level in Listening by Grade Level.....	16
FIGURE 16: Full Sample Percent Reaching Proficiency Level in Speaking by Grade Level.....	17
FIGURE 17: Full Sample Percent Reaching Proficiency Level in Reading by Grade Level.....	18
FIGURE 18: Full Sample Percent Reaching Proficiency Level in Oral Language by Grade Level.....	19
FIGURE 19: Full Sample Percent Reaching Proficiency Level in Reading for Grade 2.....	20
FIGURE 20: DRA Levels and Grade Level Expectations	22
FIGURE 21: Kindergarten Gains in DRA Text Level Fall to Spring.....	23
FIGURE 22: Kindergarten Difference in Gains on Text Level by Absenteeism.....	24
FIGURE 23: Three Years of Kindergarten Students Meet/Exceed Benchmark DRA2 Text Level.....	25
FIGURE 24: Kindergarten Difference in Gains in MLPP Expressive Oral Language by Absence Level.....	26
FIGURE 25: Kindergarten Differences in Gains in MLPP Hearing/Recording Sounds by Absence Level.....	26
FIGURE 26: Kindergarten Gains in MLPP Sight Words	27
FIGURE 27: Kindergarten Gains in MLPP Concepts about Print	28
FIGURE 28: Kindergarten Gains in MLPP Oral Language Expressive.....	29
FIGURE 29: Kindergarten Gains in MLPP Hearing and Recording Sounds	29
FIGURE 30: Kindergarten Difference in Gains in MLPP Sight Words by Absence Level	30
FIGURE 31: DRA Levels and Grade Level Expectations	32
FIGURE 32: Performance Based on Receipt of GrapeSEED in Kindergarten	33
FIGURE 33: Performance Based on Receipt of GrapeSEED in Preschool and Kindergarten	34
FIGURE 34: Performance in Kindergarten Compared with Groups Who Did Not Receive GrapeSEED.....	35
FIGURE 35: DRA Levels and Grade Level Expectations	38
FIGURE 36: Grade 1 Gains in DRA Text Level.....	39
FIGURE 37: Grade 1 Students Differences in DRA Achievement by Prior Kindergarten GrapeSEED	39
FIGURE 38: Grade 1 Gains in DRA Comprehension Rubric.....	40
FIGURE 39: Grade 1 Gains in MLPP Known Words	41
FIGURE 40: Grade Gains in MLPP Hearing and Recording Sounds.....	42
FIGURE 41: Grade 1 Gains in DRA Comprehension Rubric by Absence Level	43
FIGURE 42: DRA Levels and Grade Level Expectations	45
FIGURE 43: The “Dose Effect” in Evidence- More GrapeSEED Meant Larger Gains.....	45

LIST OF TABLES

TABLE 1:	Demographic Characteristics of the GSRP Students	7
TABLE 2:	CELF Assessment Descriptions	8
TABLE 3:	Listening Proficiency Level * Grade Cross Tabulation	16
TABLE 4:	Speaking Proficiency Level * Grade Cross Tabulation	17
TABLE 5:	Reading Proficiency Level * Grade Cross Tabulation	18
TABLE 6:	Oral Language Proficiency Level * Grade Cross Tabulation	19
TABLE 7:	Significant Change in DRA Text Scores from Fall to Spring	23
TABLE 8:	Kindergarten Students Meet/Exceed Benchmark DRA Text Level	24
TABLE 9:	MLPP Assessment Descriptions	26
TABLE 10:	MLPP Sight Word Gains from Fall to Spring	27
TABLE 11:	MLPP Concepts about Print Gains from Fall to Spring	28
TABLE 12:	MLPP Oral Language Expressive Gains from Fall to Spring	29
TABLE 13:	Kindergarten Gains in MLPP Hearing and Recording Sounds	29
TABLE 14:	Sample Size Summary for DRA Assessments for Kindergarten Students	31
TABLE 15:	Distribution of GrapeSEED from Preschool to Kindergarten	32
TABLE 16:	Descriptive Statistics Based on Receipt of GrapeSEED in Kindergarten	33
TABLE 17:	Descriptive Statistics Based on Receipt of GrapeSEED in Preschool and Kindergarten	34
TABLE 18:	Descriptive Statistics for DRA Text Scores in Kindergarten	35
TABLE 19:	Demographics Analysis for Kindergarten DRA Assessment	36
TABLE 20:	Grade 1 Students Who Met or Exceeded End-of-Year Benchmark DRA	39
TABLE 21:	Grade 1 Students Receiving GrapeSEED Who Met or Exceeded End-of-Year Benchmark DRA	39
TABLE 22:	Descriptive Statistics for DRA Comprehension Rubric	40
TABLE 23:	MLPP Assessment Descriptions	41
TABLE 24:	Descriptive Statistics Showing the “Dose Effect”	46

ABOUT GRAPESEED

GrapeSEED is an English-language acquisition program for children (ages 4-12). It is currently in use in 16 countries, in over 600 schools, serving more than 40,000 students. In the United States, the program has been used for language development with children who are English Language Learners (ELL / ESL), preschool children, and Limited English Proficiency students (LEP). It has been designated as an appropriate Tier I and Tier II program for Response to Intervention initiatives.

The program is “research based” in that it is based on the theoretical and scientific research of scholars such as Finocchiaro and Brumfit (functional-notional approach) and Krashen and Crawford (communicative-based approach). Other scholars, such as Maslow, Glasser, Csikszentmihalyi, Deming and Willis, are cited in the program manual as influential in the design of the program. In addition, GrapeSEED includes the five essential or critical components for reading instruction identified by the National Reading Panel, and all the components identified by a broader group of scholars as critical in an early literacy program. The program is unique in its emphasis on the development of oral language.

ABOUT THE RESEARCH STUDIES

The Department of Organizational Leadership within Oakland University’s School of Education and Human Services (SEHS) is home to programs in human resources development, teacher leadership, school leadership at the principal and central office levels, and higher education leadership. The mission of this department is to develop educational leaders in a variety of organizational settings through academic and field-based experiences that facilitate transformative, research-based, ethical and socially-just leadership practices.

Dr. Julia Smith from this department conducted independent research studies on the effectiveness of the GrapeSEED program with students. The studies were conducted at multiple schools and with diverse populations of children. They used various testing measurements. These studies were longitudinal in nature—the researchers tracked the performance of the children from year-to-year. Most of these studies are ongoing.

In the following sections, we will review a few key findings from the research.

BERRIEN RESA GSRP

At-Risk Preschool Assessment: CELF



ABOUT THE ASSESSMENT

This study is part of a larger study that was designed to evaluate the effectiveness of GrapeSEED when used with 490 Great Start Readiness Program (GSRP) preschool students in the Berrien Regional Educational Service Area (RESA) school district in Michigan. The teachers were trained to deliver the program according to the established procedures. Each lesson required approximately 20-30 minutes. All students were assessed in the Fall and Spring for oral language proficiency in English using the Clinical Evaluation of Language Fundamentals (CELF). Six subtests of the CELF were administered: Expressive Vocabulary, Phonological Awareness, Recalling Sentences, Recalling Sentences in Context, Word Structure, and Sentence Structure.

Of the 490 students who provided any information, 479 took the Fall assessments. Of these 479 students, 432 took the Spring assessments. Thus, the analytic sample was made up of those 432 students who had both pre and post assessment data.

DEMOGRAPHIC CHARACTERISTICS

The demographic characteristics of the analytic sample are summarized in the following table. These are the subgroups the researchers compared as they were looking at each test. Note that the district reports do not have subgroup comparisons because the subgroups at the district level are not large enough to gain any legitimate data.

For each of the subtests in this report, the demographic differences in change over time in the CELF outcomes are shown in data tables and graphs. It is important to note that the results of each of these tests could not likely happen by chance. The $p < .0001$ for each test means that the odds of the results occurring by chance are less than 1 in 10,000. The significance of .000 in each Paired Samples Test table is another strong indicator that the results did not occur by chance.

CHARACTERISTIC	PERCENT
ATTENDANCE GROUP	
AM Only	35.9
PM Only	37.3
Full Day	26.9
GENDER	
Female	50.9
Male	49.1
ETHNICITY	
White	64.1
Black	25.7
Hispanic	7.6
Other Ethnicity	2.5
Identified as special education students	6.2
Designated English as a Second Language (ESL), English Language Learner (ELL)/ Limited English Proficient (LEP), or both	28.5
Received free/reduced lunch	38.9
AGE GROUP	
Age at start of preschool Mean = 4.33 yrs. (SD = 0.30 yrs.) Four years or younger	15.7
Between 4 years and 4 years and 6 months	51.6
Older than 4 years and 6 months	32.6
ABSENCE LEVEL	
Mean = 9.35 absences (SD = 8.53 absences) 9 or fewer absences	62.0
More than 9 absences	38.0

TABLE 1:
Demographic Characteristics of GSRP Students

ABOUT CELF

The Clinical Evaluation of Language Fundamentals (CELF) is a standardized test that determines if a student has a language disorder or delay and allows researchers to compare subgroups within a large sample of students. CELF tests are administered to students individually.

For this study, raw scores were used instead of national norms, which are based on homogeneous groups of students. We want to measure growth gains between demographic subgroups, and raw scores are the purest way to do that.

The following table provides a brief description of each of the six subtests administered in Fall and Spring:

ASSESSMENT	DESCRIPTION
Expressive Vocabulary	Measures a student's ability to name or correctly label illustrations of people, objects, and actions.
Phonological Awareness	Measures a student's knowledge of sound structure of the language and the ability to manipulate sound.
Recalling Sentences	Measures a student's ability to imitate a sentence given by the test administrator.
Recalling Sentences in Context	Measures a student's ability to imitate a sentence in the correct context given by the test administrator.
Word Structure	Measures a student's ability to complete sentences using the targeted structure(s).
Sentence Structure	Measures a student's ability to recognize a picture that illustrates a given sentence.

TABLE 2: CELF Assessment Descriptions

EXPRESSIVE VOCABULARY

There were significant differences in achievement based on Ethnicity and English Language Status.

The following graphs show the patterns of growth by Ethnicity and Language Status.

When comparing ethnic subgroups, there was significant difference in achievement level, but all subgroups displayed equivalent growth.

When comparing Standard English speaking students with LEP/ESL students, both groups grew significantly, but the LEP/ESL students were closing the gap. They grew at a faster rate than the Standard English speaking students.

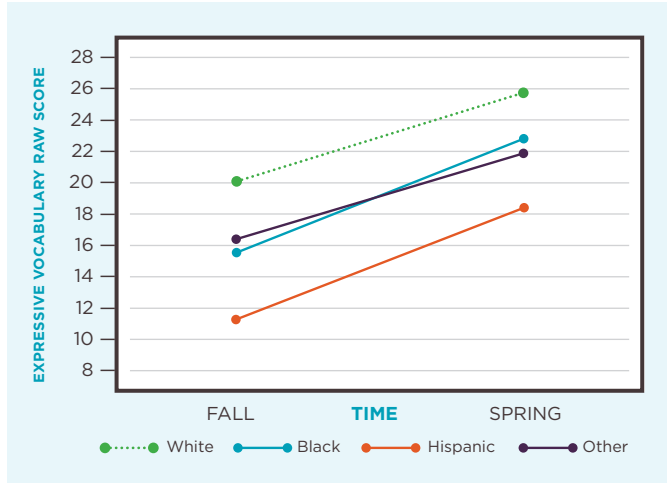


FIGURE 1
Ethnic Differences in Growth Pattern in Expressive Vocabulary Skills

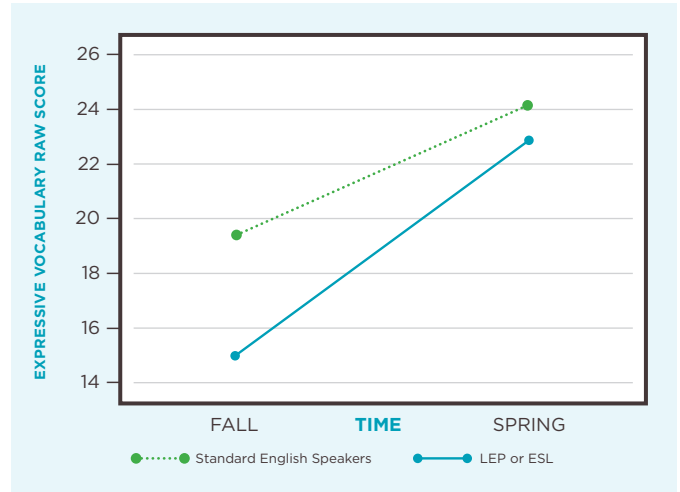


FIGURE 2
English Language Status Differences in Growth Pattern in Express Vocabulary Skills

PHONOLOGICAL AWARENESS

There were significant differences in achievement based on Ethnicity, English Language Status, and Lunch Status, as seen in the following graphs showing differences in patterns of growth for the subgroups.

Comparing ethnic groups shows the Black and Other Ethnicity students gained on the White students. The Hispanic students reduced the gap, but did not close it.

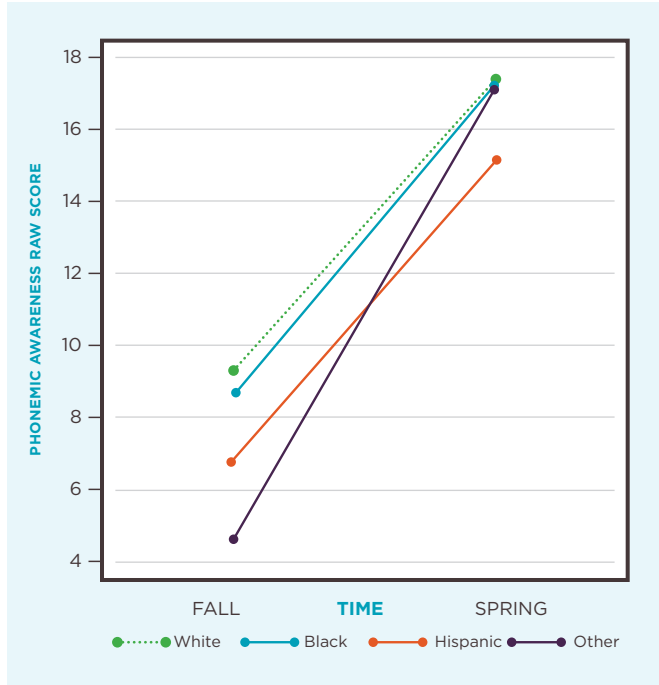


FIGURE 3
Ethnic Differences in Growth Pattern in Phonological Awareness Skills

The LEP and ESL students caught up to the Standard English speaking students in the Spring assessment.

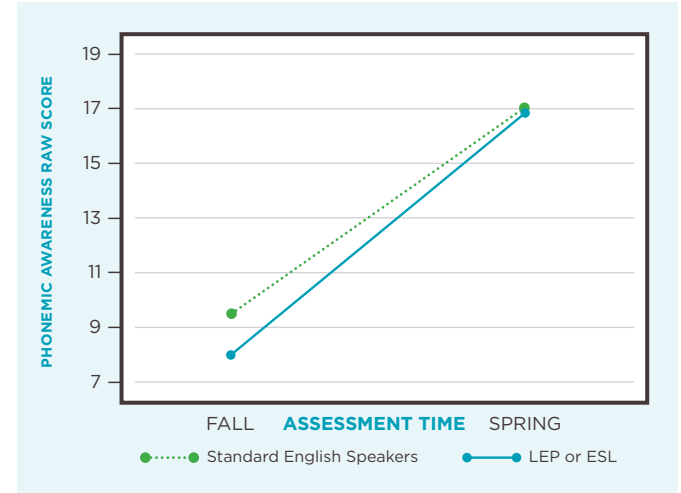


FIGURE 4
English Language Status Differences in Growth Pattern in Phonological Awareness Skills

Students between ages four and 4 years and 6 months caught up to the students over 4 years and 6 months of age.

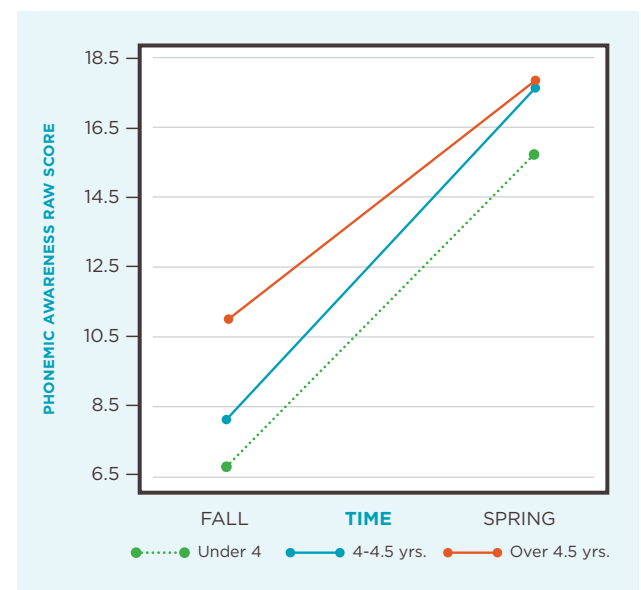


FIGURE 5
Age Group Status Differences in Growth Pattern in Phonological Awareness Skills

RECALLING SENTENCES

There were significant differences in achievement based on Lunch Status.

The following graph shows the pattern of growth by Lunch Status. Students receiving free or reduced lunch, which is an indication of poverty, reduced the gap between themselves and students not receiving free or reduced lunch.



FIGURE 6
Free/Reduced Lunch Status Differences in Growth Pattern in Recalling Sentences

WORD STRUCTURE

There were significant differences in achievement based on Ethnicity and English Language Status, as seen in the following graphs showing differences in patterns of growth for the subgroups.

Comparing ethnic groups shows the Black students gained on the White students.

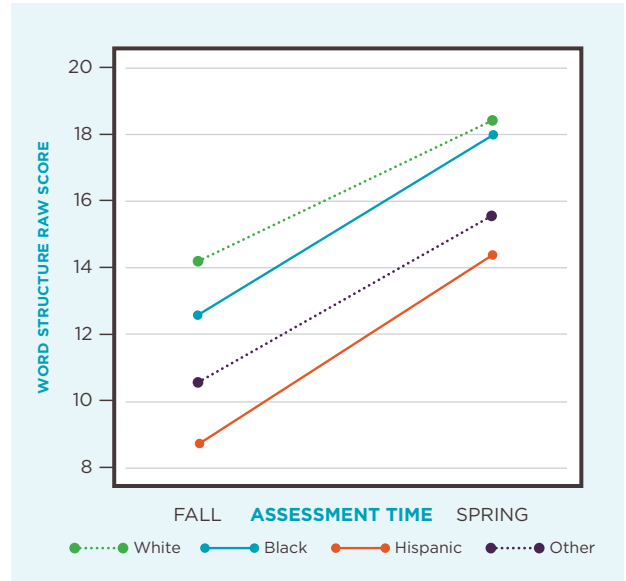


FIGURE 7
Ethnic Differences in Growth Pattern in Word Structure

The LEP and ESL students reduced the gap between themselves and the Standard English speaking students.

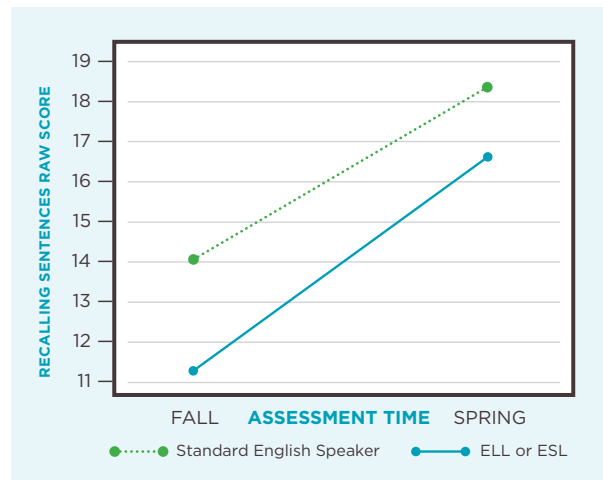


FIGURE 8
English Language Status Differences in Growth Pattern in Word Structure

SENTENCE STRUCTURE

There were significant differences in achievement based on Ethnicity, Language Status, and Lunch Status, as seen in the following graphs showing differences in patterns of growth for the subgroups.

Comparing ethnic groups shows the Hispanic, Black and Other Ethnicity students reduced the gap between themselves and the White students when demonstrating appropriate sentence structures.



FIGURE 9
Ethnic Differences in Growth Pattern in Sentence Structure

The LEP and ESL students were catching up to the Standard English speaking students.

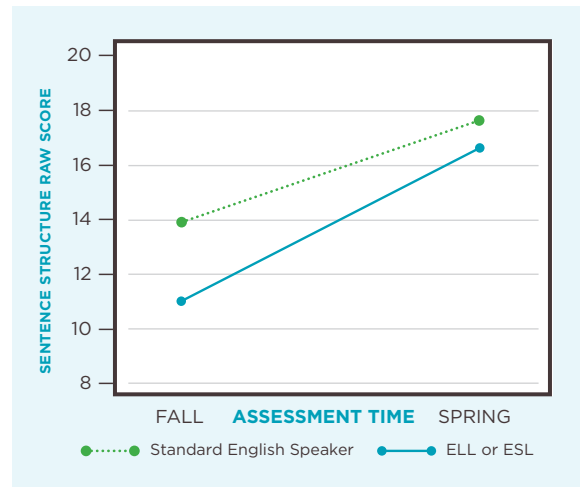


FIGURE 10
English Language Status Differences in Growth Pattern in Sentence Structure

Students receiving free or reduced lunch reduced, but did not close, the gap between themselves and students who did not receive free or reduced lunch.



FIGURE 11
Free/Reduced Lunch Status Differences in Growth Pattern in Sentence Structure

SUMMARY OF RESULTS

Researchers looked at many subgroups across six CELF subtests administered in the Fall and Spring, including: Expressive Vocabulary, Phonological Awareness, Recalling Sentences, Recalling Sentences in Context, Word Structure, and Sentence Structure. There are two very important issues to consider:

- ✦ It is important to move students out of the “at risk” category to eliminate their need for an intervention, to improve their self-concept, and to help schools financially—the faster, the better. GrapeSEED was able to do this.
- ✦ School districts are not just asked to show student growth in these areas but are tasked with closing the gap for the subgroups. The research clearly shows that GrapeSEED closed the oral language gap.

The CELF data show a significant increase in proficiency from Fall to Spring on all six tests for all students. The following graph shows that every student is gaining, from at-risk students to high-achieving students. Each line shows a different assessment and the gains from Fall to Spring. Students are moving differently in each of the different areas, as would be expected in any program.

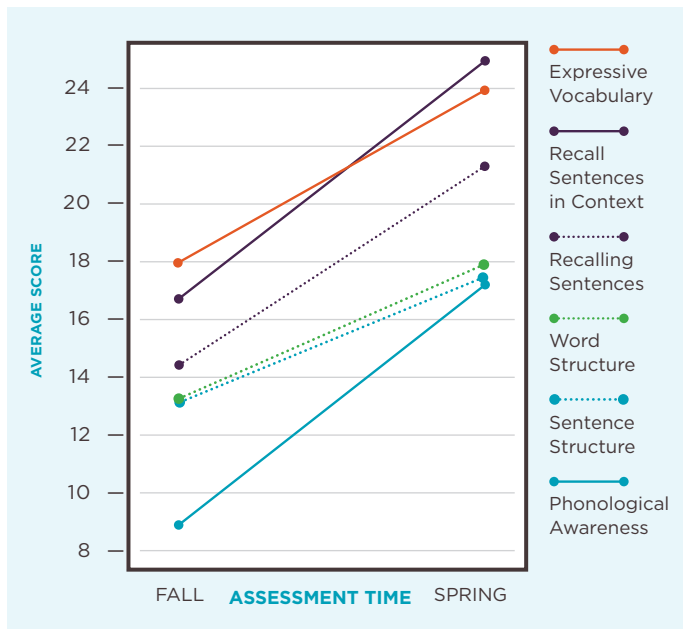


FIGURE 12
Change in Average Score for Each Assessment

The graph to the right shows how the Great Start Readiness Program (GSRP) students compared to other students their age across the U.S.

Students naturally grow over time and the CELF test accounts for this by using nationally normed data (normal growth would show as a flat line). The upward slope on this graph shows the GrapeSEED students growing much faster than their national peers (in every category).

The percent of students performing at or above their age norm increased significantly from the Fall to Spring assessment. The difference is due entirely to the improvement of at-risk students since all students who performed at or above their age norms in the Fall assessment maintained that status in the Spring assessment.

In summary, the GrapeSEED students grew faster than expected for their age. The growth was deemed highly significant, meaning it could not happen by chance.

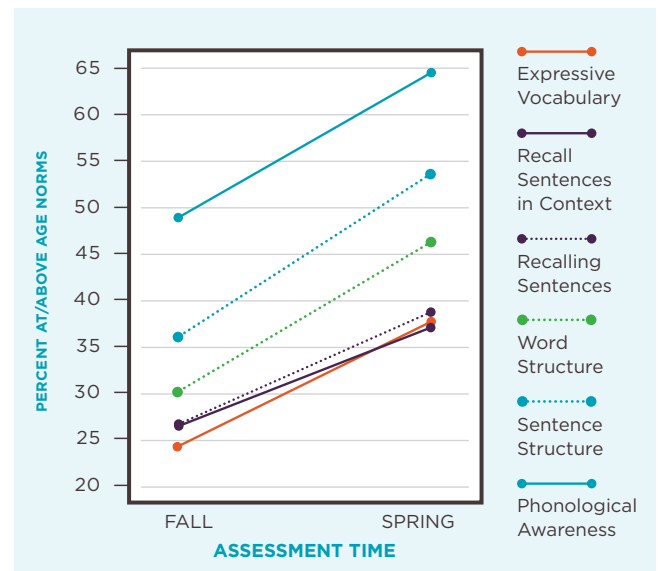


FIGURE 13
Change in Percent of Students Performing At or Above Their Age Norms

BERRIEN SPRINGS SCHOOLS

K-1-2 ELL Assessment: WIDA



ABOUT THE ASSESSMENT

In this study, English Language Learners (ELL) students from Berrien Springs Schools in Michigan who spoke 22 different languages received GrapeSEED in Grades K, 1, and 2. The study was conducted over three years. In Spring 2014, the students were tested using the WIDA assessment.

In this report, English language proficiency scores are reported for each grade level for each of the following three language domains and the composite as determined by WIDA:

- ✘ Listening
- ✘ Speaking
- ✘ Reading
- ✘ Oral Language (Listening 50%, Speaking 50%)

On the chart for each of the domains, scores for each grade level are presented on a composite bar chart. Each grade level is represented by a different color. The bars represent the percentage of the group achieving the designated proficiency level. The exact percentages are found in the accompanying cross tabulation table. Each of these tables shows the number and percentage of students that perform at each proficiency level.

ABOUT WIDA

The WIDA Consortium (World-Class Instructional Design and Assessment - WIDA) is an educational consortium of state departments of education. Currently, 33 U.S. states participate in the WIDA Consortium. WIDA designs and implements proficiency standards and assessment for grade K-12 English Language Learners (ELLs).

WIDA ACCESS for ELLs (Assessing Comprehension and Communication in English State-to-State for English Language Learners) is a secure, large-scale English language proficiency assessment given to kindergarten students through 12th graders who have been identified as ELLs. It is given annually in WIDA Consortium member states to monitor students' progress in acquiring academic English.

Proficiency levels are defined by WIDA as:

- (1) Entering
- (2) Emerging
- (3) Developing
- (4) Expanding
- (5) Bridging
- (6) Reaching

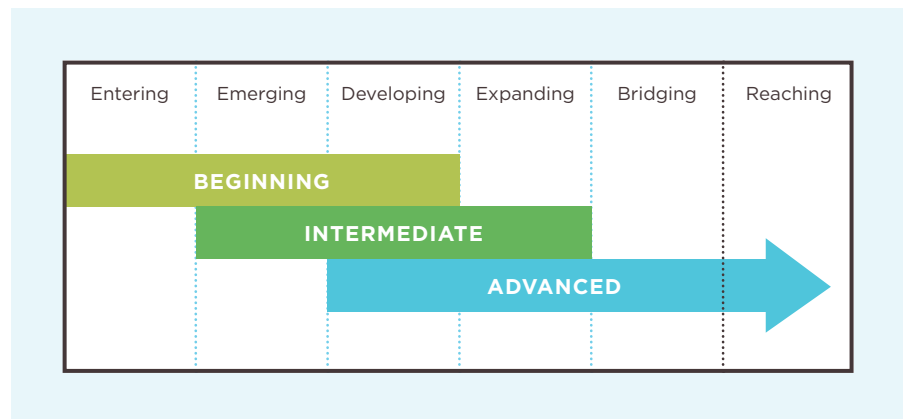


FIGURE 14: WIDA Proficiency Levels

For a detailed explanation of each level, visit the WIDA website at <https://www.wida.us>.

The test is administered to kindergarten students individually. The Speaking domain is administered to students in all grades individually as well. Listening and Reading domain tests can be administered to groups of students. Results are reported in three ways: as raw scores, scale scores, and English language proficiency (ELP) levels.

LISTENING SKILLS

Listening is the first step in the natural progress of children learning language. Once children hear the words of the language, they can begin speaking them.

Most of the students scored high in this domain as evidenced by these findings:

- ✦ In kindergarten, over 70% of the students in the class reached listening proficiency.
- ✦ By second grade, the number of students performing at higher levels and reaching listening proficiency was more than 80%.

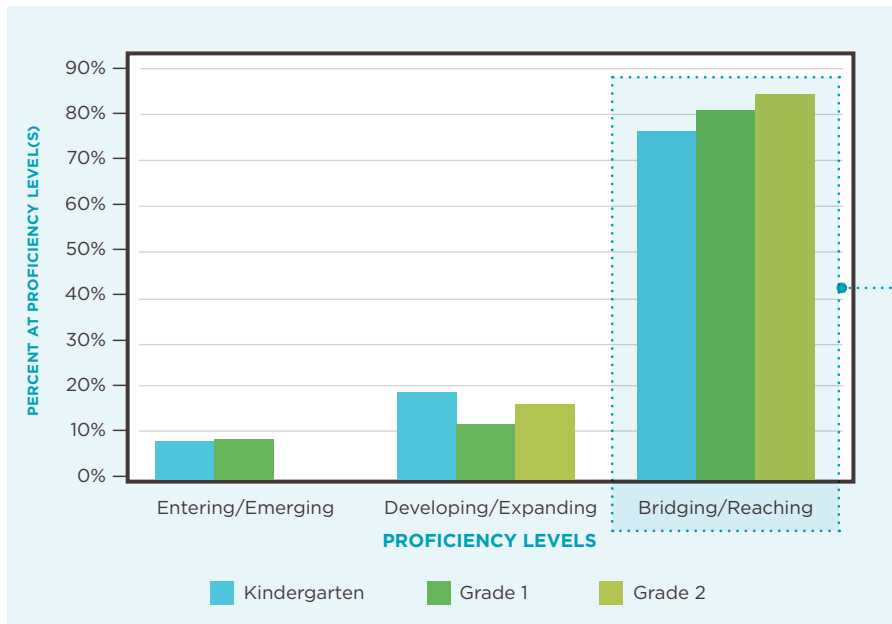


FIGURE 15:
Full Sample Percent Reaching Proficiency Level in Listening by Grade Level

LISTENING PROFICIENCY LEVEL		GRADE			
		0	1	2	TOTAL
1.00 Entering	Count	1	1	0	2
	% within Grade	3.4%	3.7%	.0%	2.4%
2.00 Emerging	Count	1	1	0	2
	% within Grade	3.4%	3.7%	.0%	2.4%
3.00 Developing	Count	3	2	0	5
	% within Grade	10.3%	7.4%	.0%	6.0%
4.00 Expanding	Count	2	1	4	7
	% within Grade	6.9%	3.7%	14.8%	8.4%
5.00 Bridging	Count	7	20	20	47
	% within Grade	24.1%	74.1%	74.1%	56.6%
6.00 Reaching	Count	15	2	3	20
	% within Grade	51.7%	7.4%	11.1%	24.1%
TOTAL	Count	29	27	27	83
	% within Grade	100.0%	100.0%	100.0%	100.0%

TABLE 3:
Listening Proficiency Level * Grade Cross Tabulation

SPEAKING SKILLS

The next step in the natural progress of children learning language is speaking. The results conveyed these facts:

- ✘ In kindergarten, the largest number of students performed at midlevel.
- ✘ Over one-quarter of the students performed at the higher, Bridging level.
- ✘ More than one-third of the first and second grade students reached proficiency!

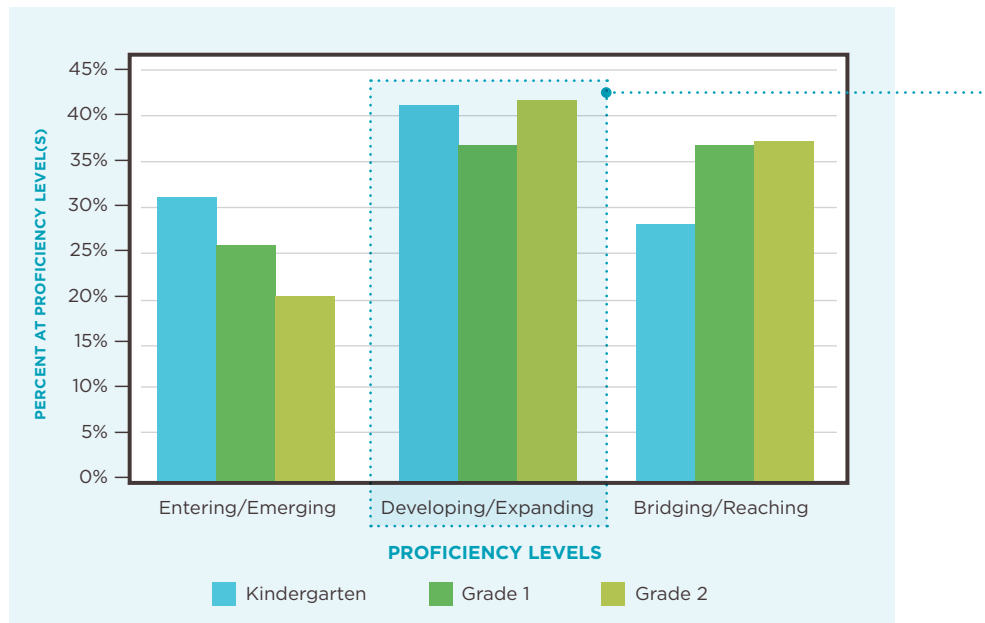


FIGURE 16:
Full Sample Percent Reaching Proficiency Level in Speaking by Grade Level

SPEAKING PROFICIENCY LEVEL		GRADE			
		0	1	2	TOTAL
1.00 Entering	Count	2	1	0	3
	% within Grade	6.9%	3.7%	.0%	3.6%
2.00 Emerging	Count	7	6	1	14
	% within Grade	24.1%	22.2%	3.7%	16.9%
3.00 Developing	Count	11	6	9	26
	% within Grade	37.9%	22.2%	33.3%	31.3%
4.00 Expanding	Count	1	4	4	9
	% within Grade	3.4%	14.8%	14.8%	10.8%
5.00 Bridging	Count	8	0	3	11
	% within Grade	27.6%	.0%	11.1%	13.3%
6.00 Reaching	Count	0	10	10	20
	% within Grade	.0%	37.0%	37.0%	24.1%
TOTAL	Count	29	27	27	83
	% within Grade	100.0%	100.0%	100.0%	100.0%

TABLE 4:
Speaking Proficiency Level * Grade Cross Tabulation

READING SKILLS

By third grade, children should develop reading skills.

- ✘ In kindergarten, most of the children were still at the lower levels of reading proficiency as expected.
- ✘ However, by second grade, 75% of the students reached reading proficiency, in half the time of the national average!

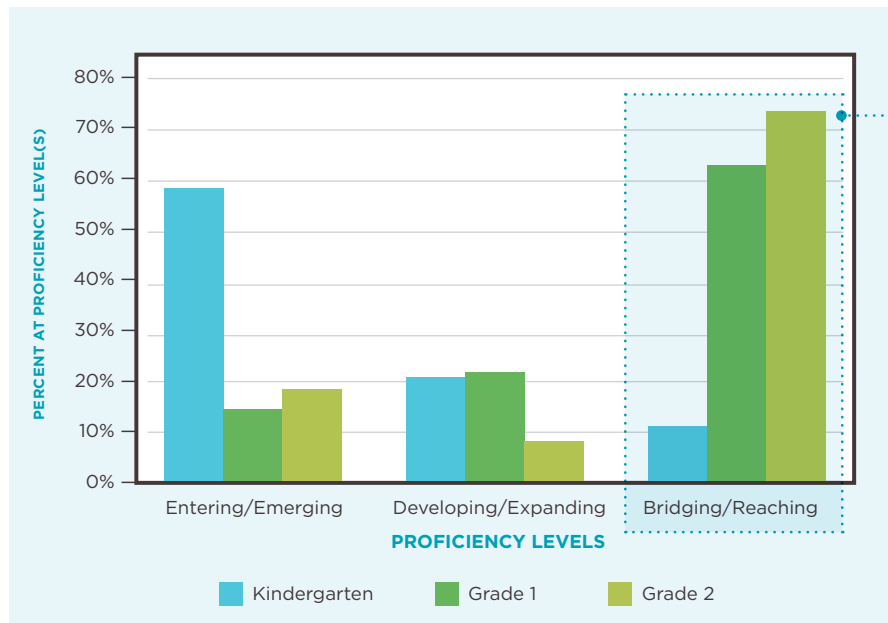


FIGURE 17:
Full Sample Percent Reaching Proficiency Level in Reading by Grade Level

READING PROFICIENCY LEVEL		GRADE			TOTAL
		0	1	2	
1.00 Entering	Count	16	2	2	20
	% within Grade	55.2%	7.4%	7.4%	24.1%
2.00 Emerging	Count	1	2	3	6
	% within Grade	3.4%	7.4%	11.1%	7.2%
3.00 Developing	Count	4	4	0	8
	% within Grade	13.8%	14.8%	.0%	9.6%
4.00 Expanding	Count	2	2	2	6
	% within Grade	6.9%	7.4%	7.4%	7.2%
5.00 Bridging	Count	6	15	16	37
	% within Grade	20.7%	55.6%	59.3%	44.6%
6.00 Reaching	Count	0	2	4	6
	% within Grade	.0%	7.4%	14.8%	7.2%
TOTAL	Count	29	27	27	83
	% within Grade	100.0%	100.0%	100.0%	100.0%

TABLE 5:
Reading Proficiency Level * Grade Cross Tabulation

ORAL LANGUAGE

Oral Language combines both listening and speaking aspects. Key findings include:

- ✦ In kindergarten, over 40% of the students reached oral language proficiency, with 80% of the students placing in between the mid and higher levels.
- ✦ The majority of the first and second grade students scored high in oral language.
- ✦ By second grade, 100% of the students were at the developing or higher levels.

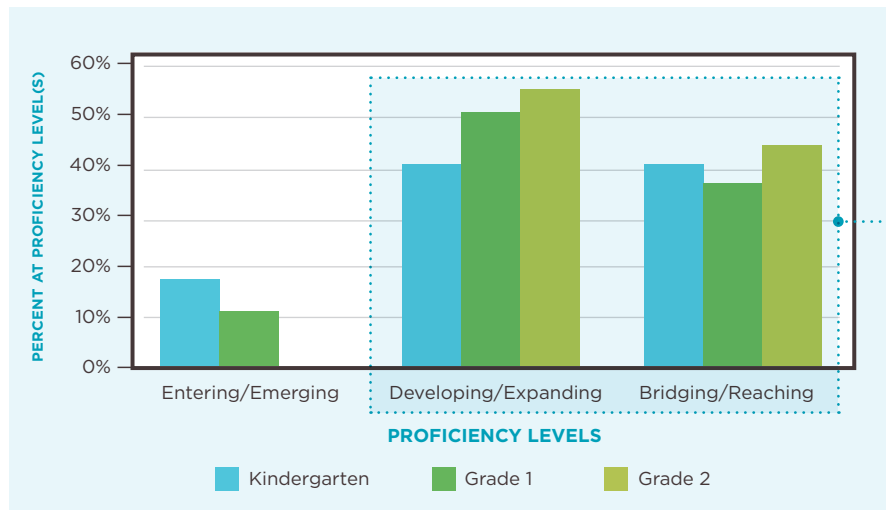


FIGURE 18:
Full Sample Percent Reaching Proficiency Level in Oral Language by Grade Level

ORAL LANGUAGE PROFICIENCY LEVEL		GRADE			
		0	1	2	TOTAL
1.00 Entering	Count	2	1	0	3
	% within Grade	6.9%	3.7%	.0%	3.6%
2.00 Emerging	Count	3	2	0	5
	% within Grade	10.3%	7.4%	.0%	6.0%
3.00 Developing	Count	8	8	7	23
	% within Grade	27.6%	29.6%	25.9%	27.7%
4.00 Expanding	Count	4	6	8	18
	% within Grade	13.8%	22.2%	29.6%	21.7%
5.00 Bridging	Count	4	8	9	21
	% within Grade	13.8%	29.6%	33.3%	25.3%
6.00 Reaching	Count	8	2	3	13
	% within Grade	27.6%	7.4%	11.1%	15.7%
TOTAL	Count	29	27	27	83
	% within Grade	100.0%	100.0%	100.0%	100.0%

TABLE 6:
Oral Language Proficiency Level * Grade Cross Tabulation

SUMMARY OF RESULTS

The students' proficiency as evidenced in the WIDA scores reflected the natural progression of children learning language.

Listening comes first because the children have to be able to hear the words of the language before they can speak. The kindergarten students were certainly successful in listening.

Next comes speaking. The research showed that the first and second graders scored high in speaking and oral language.

And finally, by the third grade, children should develop reading skills. The GrapeSEED students achieved reading proficiency by the end of second grade.

National research shows that ELL children typically take 6–8 years to reach grade level proficiency. GrapeSEED students, however, reached proficiency in reading in just 2–3 years.

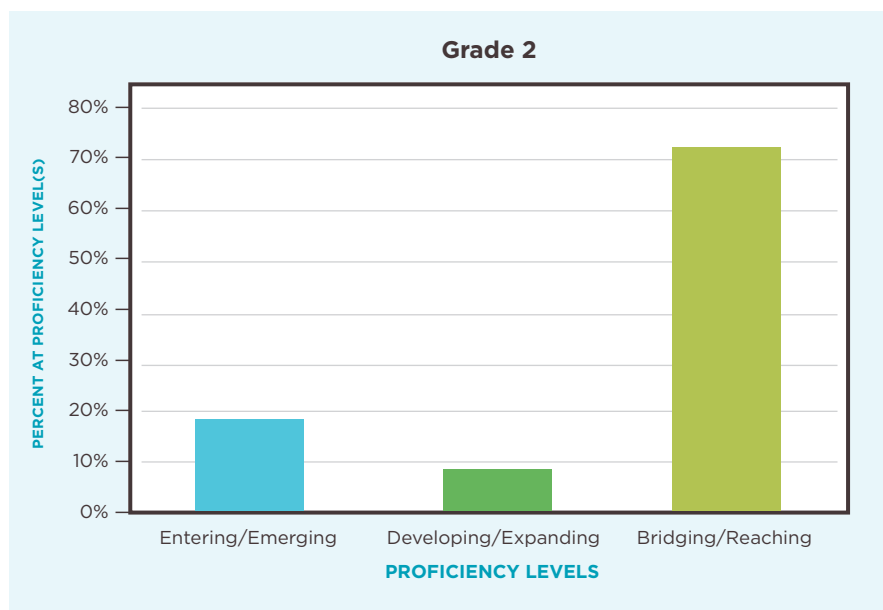


FIGURE 19:
Full Sample Percent Reaching Proficiency Level in Reading for Grade 2

At-Risk Kindergarten Assessments: DRA, MLPP



ABOUT THE ASSESSMENT

This study, spanning a period of three years, conducted at the Parker Elementary School, part of Clintondale Community Schools in Michigan, was designed to evaluate the effectiveness of GrapeSEED when used with English-speaking kindergarten and first grade students from an economically deprived area (100% Free and Reduced Lunch).

The challenge was that these children often times were speaking their own dialect of English, or a cultural language. So in many ways, Standard English was like a second language for these children. A related factor was that the students were taught by multiple teachers with varying abilities and styles.

In this study, teachers were trained to deliver the program according to the established procedures. From September to May 2014, three kindergarten teachers delivered 100, 100, and 98 lessons, respectively. Four first grade teachers delivered 148, 136, 157, and 157 lessons, respectively. Lessons varied from twenty to forty minutes. A total of 71 kindergarten students received GrapeSEED, participating in an average of 82 lessons. A total of 85 first grade students received GrapeSEED, participating in an average of 128 lessons.

To evaluate the impact of the program on literacy, all students were assessed in the Fall, mid-year, and Spring using the Developmental Reading Assessment (DRA) Text Level and Comprehension Rubric, and three assessments from the Michigan Literacy Progress Profile (MLPP): Known Words Assessment, Concepts About Print, and Hearing and Recording Sounds in Words. In addition, kindergarten students were assessed using the MLPP measure of Expressive Oral Language. Results of the DRA Text Level assessments were compared to the benchmarks established by researchers at the University of Arkansas.

ABOUT DRA

The Developmental Reading Assessment (DRA) is a standardized test used to determine whether students are reading at, above, or below their grade level. The test is administered to students individually and students are scored on their ability to read and retell text. Based on their scores and levels, teachers can then match students to books on their guided reading level.

The following graph gives an overview of the DRA levels and grade level expectations.

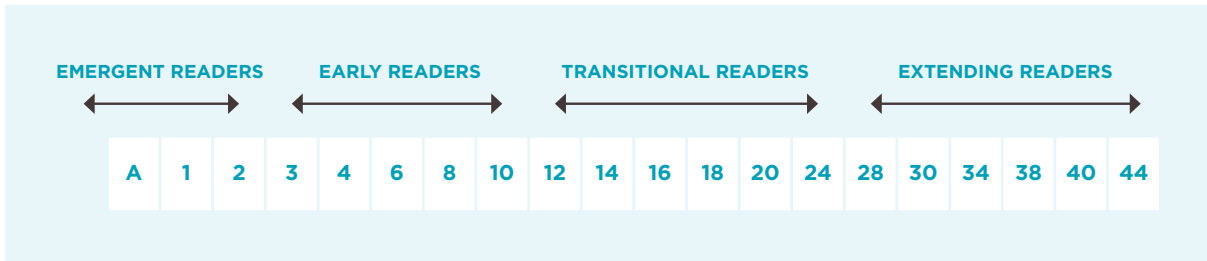


FIGURE 20:
DRA Levels and Grade Level Expectations

GRADE LEVEL EXPECTATIONS:
LEVEL 3 Beginning of Gr. 1
LEVEL 16 End of Gr. 1 – Beginning of Gr. 2
LEVEL 28 End of Gr. 2 – Beginning of Gr. 3
LEVEL 38 End of Gr. 3

The DRA Comprehension Rubric is also used to measure a student's understanding of text, with possible scores in the categories of Little Comprehension, Some Comprehension, Adequate Comprehension, and Exceeding Comprehension.

DRA TEXT LEVEL

Students Made Larger Gains from Mid-year to Spring

There was a significant change in scores from Fall to Spring, with the most significant change in gains from mid-year to Spring. The normal growth curve on an informal reading inventory such as DRA growth tapers off the second half of the year or from March to the end of the year. This suggests that the more GrapeSEED the students receive, the more significant the gains in this area.

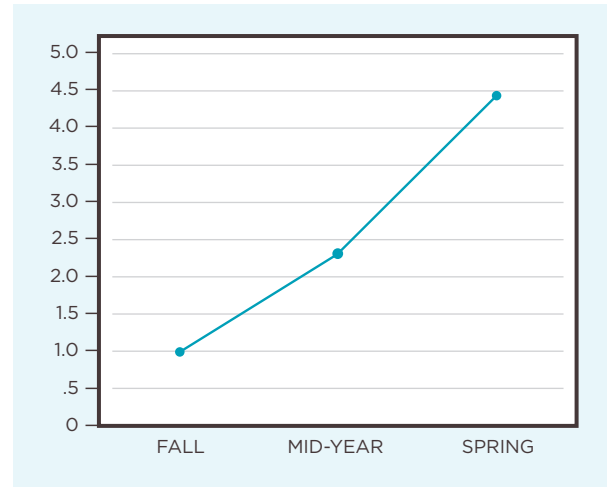


FIGURE 21:
Kindergarten Gains in DRA Text Level Fall to Spring

These results are highly significant, meaning they could not happen by chance ($p < .0001$). The following graph shows the students have clearly surpassed the DRA Text Level benchmarks of 3-4 by the second half of the year.

Significant linear change from Fall to Spring: $F = 171.90$, $p < .001$

The change in gains was more significant from mid-year to Spring: $F = 13.77$, $p < .001$.

DESCRIPTIVE STATISTICS

	MEAN	STD. DEVIATION	N
DRA Text Level Fall	1.0000	.21	71
DRA Text Level Mid	2.3189	.69	71
DRA Text Level End	4.4366	2.21	71

TESTS OF WITHIN-SUBJECTS CONTRASTS

SOURCE	TYPE III SUM OF SQUARES	df	MEAN SQUARE	F	SIG.
TIME	419.268	1	419.268	171.899	.000
LINEAR	7.552	1	7.552	13.767	.000

TABLE 7:
Significant Change in DRA Text Scores from Fall to Spring

DRA TEXT LEVEL (CONTINUED)

Boys Performed as well as Girls

Boys performed as well as girls based on the fact that there were no significant differences in gains by gender ($p=.28$), by special needs ($p = .58$), or by age group ($p = .33$). There was, however a significance by absence level ($F = 8.80$, $p = .004$).

This was a surprise, since girls typically outperform boys on literacy assessments at the elementary level. The gap tends to increase with age. The IES National Center for Education Sciences reports on the recent study by the U.S. Department of Education, First -Time Kindergarteners in 2010-2011: First Findings of the Early Childhood Longitudinal Study, Kindergarten Class of 2010-11 (ECLS-K:2011). The findings indicate that boys scored 1.4 points lower than girls on the literacy measures in the Fall assessment and 2.0 points lower in the Spring assessment. Both differences are highly significant, meaning they could not happen by chance.

The significance of this is that GrapeSEED promotes the literacy achievement of both boys and girls. The focus is on oral language and critical listening with highly engaging instructional practices.

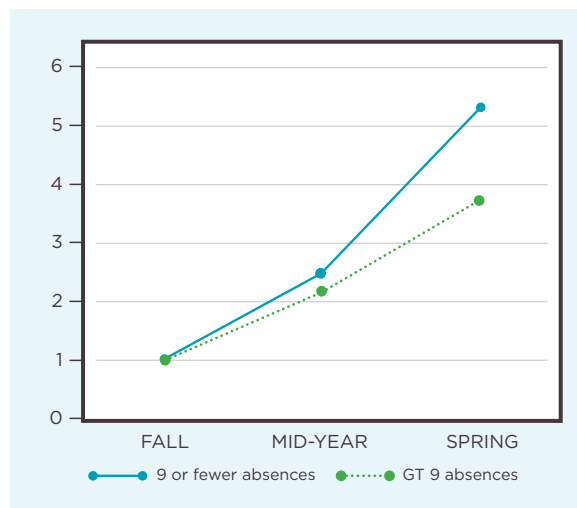


FIGURE 22:
Kindergarten Difference in Gains on Text Level
by Absenteeism

Students Exceed DRA Text Level Benchmarks

The Kindergarten Spring DRA Text Level scores were compared to the Meets/Exceeds Proficient benchmark standards developed by researchers at the University of Arkansas. Nearly all of the kindergarten students (97.2%) met or exceeded proficiency on those standards.

	FREQUENCY	PERCENT	VALID	CUMULATIVE PERCENT
APPROACHING/BELOW BASIC	2	2.8	2.8	2.8
MEET/EXCEEDS	69	97.2	97.2	100.0
PROFICIENCY TOTAL	71	100.0	1	

TABLE 8:
Kindergarten Students Meet/Exceed Benchmark DRA Text Level

THREE YEARS OF KINDERGARTEN RESULTS

After receiving GrapeSEED in the first year (2011-2012), 100 percent of the children tested at grade level or above. This had never before happened in the history of the school. In the second year (2012-2013), the same thing happened with an entirely new group of kindergarteners. In the third year (2013-2014), with yet another new group of kindergarteners, 97.2 percent of students achieved grade level or above. This chart shows the results from three years of DRA assessments.

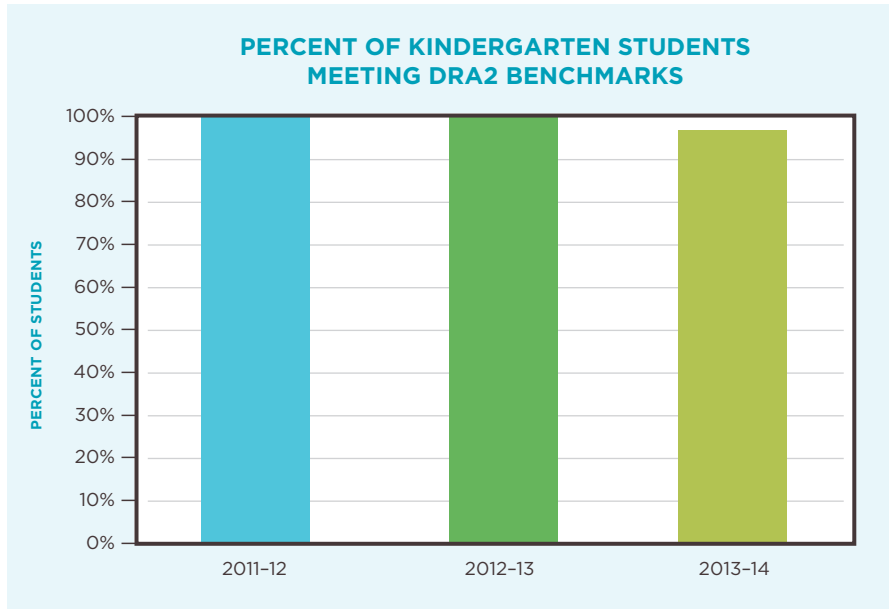


FIGURE 23:
Three Years of Kindergarten Students Meet/Exceed Benchmark DRA2 Text Level

ABOUT MLPP

The Michigan Literacy Progress Profile (MLPP) is made up of a group of assessments designed to track and promote literacy growth for students in Michigan through second grade. The goal is to help all students achieve literacy by the beginning of third grade.

Students are given points for correct answers or demonstrating comprehension. The tests are generally administered to students individually multiple times per year. For this study, assessments were administered in Fall, mid-year, and Spring. The following table provides a brief description of each assessment:

ASSESSMENT	DESCRIPTION
Known Words	Measures how easily students remember and understand high-frequency words.
Concepts about Print	Measures what students have learned about the logistics of reading language in print, for example: where to start reading, reading from left to right, and knowing the differences between pictures and text.
Hearing and Recording Sounds in Words	Measures students' abilities to hear the sounds of letters and sound within words, which helps promote spelling, reading, and writing.
Expressive Oral Language	Measures students' abilities to communicate verbally, demonstrating proper use of sentence structure, vocabulary, and elaboration of ideas.

TABLE 9: MLPP Assessment Descriptions

MLPP EXPRESSIVE GROWTH

There was a significant difference over time by absence level ($F = 7.46$, $p = .009$), showing again that students must be present to grow in literacy.

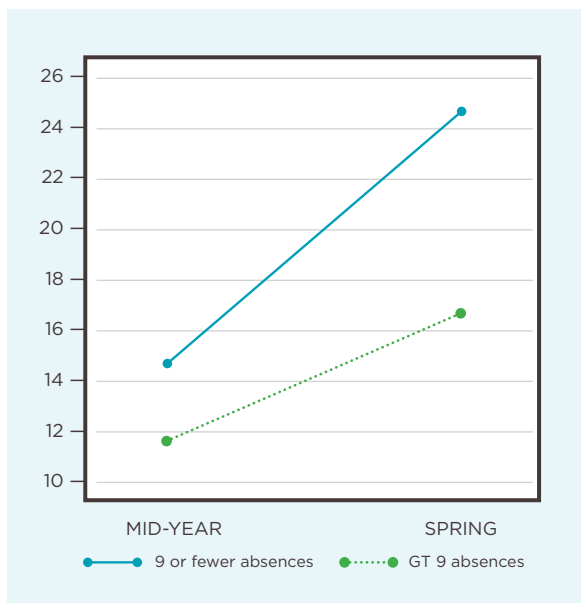


FIGURE 24: Kindergarten Difference in Gains in MLPP Expressive Oral Language by Absence Level

MLPP HEARING & RECORDING SOUNDS

There was a significant difference over time by absence level ($F = 5.01$, $p = .03$).

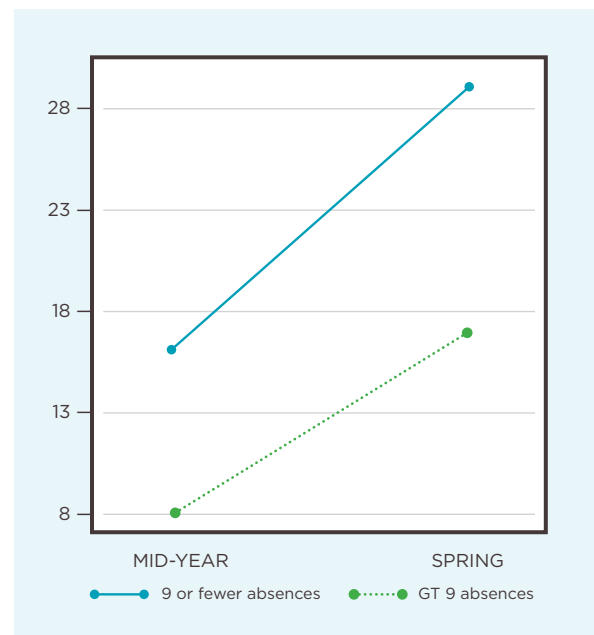


FIGURE 25: Kindergarten Differences in Gains in MLPP Hearing/Recording Sounds by Absence Level

MLPP SIGHT WORD/DECODABLE WORD LIST

Students Made Larger Gains from Mid-year to Spring

There was a significant change in scores from Fall to Spring, with a more significant change in gains from mid-year to Spring. As with the DRA, these students made somewhat larger gains in the second half of the year compared to the first. This again suggests that the more GrapeSEED the students receive, the more significant the gains in this area.

Significant linear change from Fall to Spring: $F = 260.69$, $p < .001$

The change in gains was more significant from mid-year to Spring: $F = 8.19$, $p < .006$.

DESCRIPTIVE STATISTICS

	MEAN	STD. DEVIATION	N
MLPP Sightwords Fall	6.06	6.02	71
MLPP Sightwords Mid	18.84	14.43	71
MLPP Sightwords End	37.00	19.21	71

TESTS OF WITHIN-SUBJECTS CONTRASTS

SOURCE	TIME	TYPE III SUM OF SQUARES	df	MEAN SQUARE	F	SIG.
TIME	LINEAR	33984.187	1	33984.187	260.686	.000
TIME	QUADRATIC	343.478	1	343.478	8.189	.006

TABLE 10: MLPP Sight Word Gains from Fall to Spring

Students Excel beyond National Norms

Students clearly excelled beyond the national norms set by the National Center for Education Statistics (NCES) study for the U.S. Department of Education. The NCES set the End of Kindergarten National Norms to 30 sight words. The kindergarten students receiving GrapeSEED ended with an average of 37 sight words.

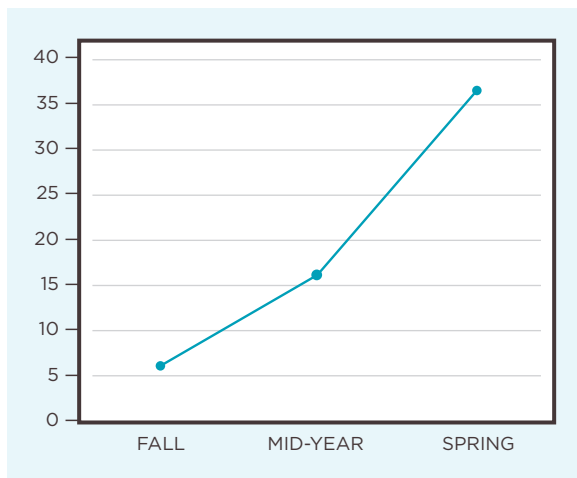


FIGURE 26: Kindergarten Gains in MLPP Sight Words

Boys Outperformed Girls

All of the MLPP skills assessments had no significant difference between males and females. In the 2012-13 assessment, the males outscored the females. This is very exciting in light of the U.S. Department of Education Kindergarten study of 2010-11. The study found females outscored males. GrapeSEED leveled the playing field. GrapeSEED promotes the literacy achievement of both boys and girls because the focus is on teaching procedures, oral language, and critical listening.

MLPP CONCEPTS ABOUT PRINT

Students Made Significant Gains from Fall to Spring

There was significant linear change from Fall to Spring, but there was no significant change in gains between Fall to mid-year compared with mid-year to Spring as seen in other assessments.

DESCRIPTIVE STATISTICS

Significant linear change from Fall to Spring: $F = 241.02$, $p < .001$

The change in gains was more significant from mid-year to Spring: $F = 0.32$, $p < .57$.

	MEAN	STD. DEVIATION	N
CaPFall	13.72	4.83	71
CaPMid	17.61	4.86	71
CaPEnd	21.15	2.47	71

TESTS OF WITHIN-SUBJECTS CONTRASTS

SOURCE	TIME	TYPE III SUM OF SQUARES	df	MEAN SQUARE	F	SIG.
TIME	LINEAR	1962.078	1	1962.078	241.016	.000
TIME	QUADRATIC	1.474	1	1.474	.321	.573

TABLE 11: MLPP Concepts about Print Gains from Fall to Spring

Students Excel Beyond National Norms

Students made significant growth and clearly excelled beyond the national norms set by the National Center for Education Statistics (NCES) study for the U.S. Department of Education. The NCES set the National Norms to a score of 20.

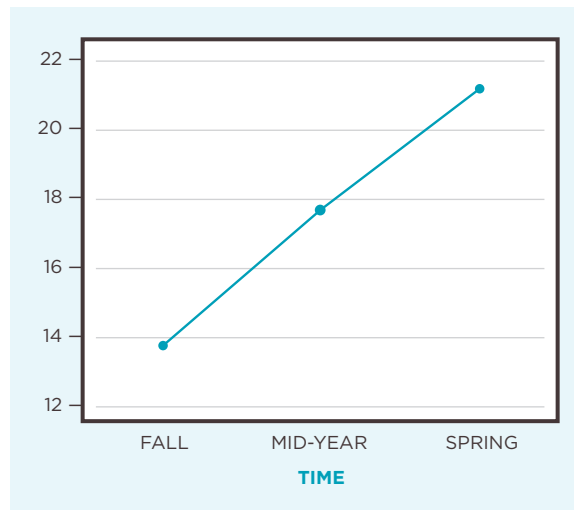


FIGURE 27: Kindergarten Gains in MLPP Concepts about Print

MLPP ORAL LANGUAGE EXPRESSIVE

Students Made Significant Gains from Mid-year to Spring

There was significant linear change from mid-year to Spring for the children in the two classrooms that provided these data.

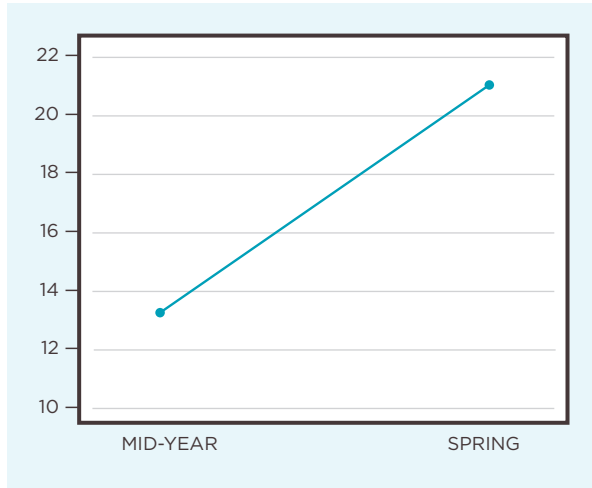


FIGURE 28:
Kindergarten Gains in MLPP Oral Language Expressive

DESCRIPTIVE STATISTICS

	MEAN	STD. DEVIATION	N
MLPPOralMid	13.40	7.28	45
MLPPOralEnd	21.13	11.44	45

Significant linear change from mid-year to Spring:
F = 260.69,
p < .001

TESTS OF WITHIN-SUBJECTS CONTRASTS

SOURCE	TIME	TYPE III SUM OF SQUARES	df	MEAN SQUARE	F	SIG.
TIME	LINEAR	1346.76	1	1346.76	73.595	.000

TABLE 12:
MLPP Oral Language Expressive Gains from Fall to Spring

MLPP HEARING AND RECORDING SOUNDS IN WORDS

Students Made Larger Gains from Mid-year to Spring

There was significant linear change from mid-year to Spring for the children in the two classrooms that provided these data.

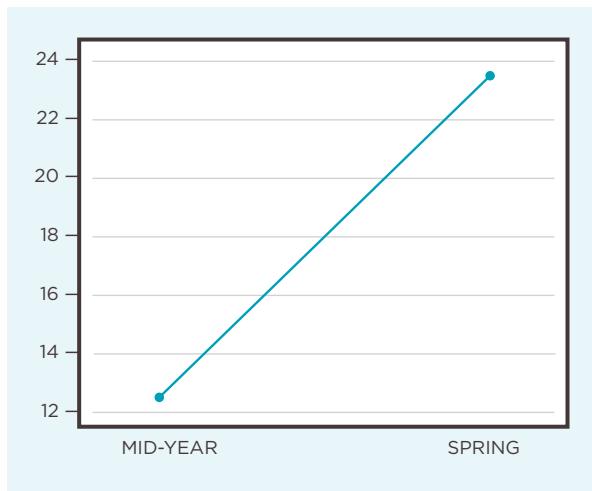


FIGURE 29:
Kindergarten Gains in MLPP Hearing and Recording Sounds

DESCRIPTIVE STATISTICS

	MEAN	STD. DEVIATION	N
HRS Mid	12.49	10.29	54
HRS End	23.37	11.75	54

Significant linear change from mid-year to Spring:
F = 156.62,
p < .001

TESTS OF WITHIN-SUBJECTS CONTRASTS

SOURCE	TIME	TYPE III SUM OF SQUARES	df	MEAN SQUARE	F	SIG.
TIME	LINEAR	3196.218	1	3196.218	156.620	.000

TABLE 13:
Kindergarten Gains in MLPP Hearing and Recording Sounds

ABSENTEEISM IMPACT

MLPP Word List

There was a significant difference over time by absence level ($F = 4.88, p = .01$). Absenteeism continues to make a difference in student literacy growth.

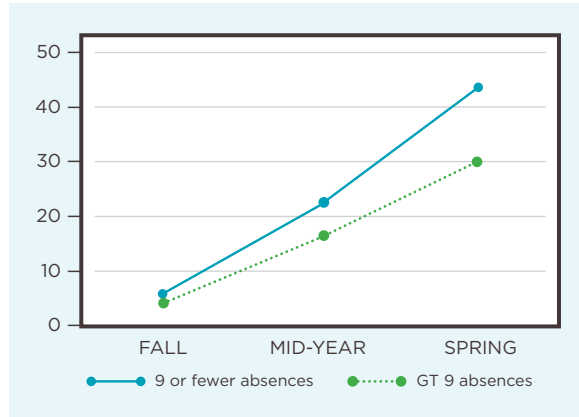


FIGURE 30:
Kindergarten Difference in Gains in MLPP Sight Words
by Absence Level

SUMMARY OF RESULTS

- ✘ The kindergarten students, regardless of gender, age, or special needs status, demonstrated significant growth on all assessments. In four out of the five assessments, the gains were more significant from mid-year to Spring.
- ✘ Nearly all of the kindergarten students (97.2%) achieved the DRA Kindergarten Level benchmark established by the University of Arkansas. Students also exceeded the national norms in the MLPP Sight Word/Decodable Word List and Concepts about Print areas.
- ✘ Boys outperformed girls in the 2012-13 Sight Word assessment—a big surprise since girls usually perform better than boys at the elementary level—showing how GrapeSEED promotes the literacy achievement for both groups because the focus is on teaching procedures, oral language, and critical listening.
- ✘ Student absences limited the achievement of some students in four of the five assessments.

Kindergarten Assessments: DRA, MLPP



ABOUT THE ASSESSMENT

This study was designed to evaluate the effectiveness of GrapeSEED. The study conducted at Berrien Springs Schools in Michigan, involved 114 kindergarten students; 41 (36%) did not receive GrapeSEED while 73 (64%) did receive GrapeSEED during the 2013-2014 school year. Teachers were trained to deliver the program according to the established procedures.

To evaluate the impact of the program on literacy, all students were assessed using the Developmental Reading Assessment (DRA). Results of the DRA Text Level assessments were compared to the benchmarks established by researchers at the University of Arkansas.

The data set contains information on 114 students from six teachers. However, the analytic sample shifts depending on the assessment.

DRA2 TEXT LEVEL	Of the students, 112 participated in Spring and Fall assessments. However, the Fall level was reported at 1 with no variability. There were 100 students who participated in mid-year assessments. For this analysis, mean substitution was used for missing values to maximize the sample.
DRA2 COMPREHENSION RUBRIC	Of the students, 113 participated in mid-year and Spring assessments, while 109 students participated in Fall assessments. For this analysis, mean substitution was used for missing values to maximize the sample.

TABLE 14:
Sample Size Summary for DRA Assessments for Kindergarten Students

ABOUT DRA

The Developmental Reading Assessment (DRA) is a standardized test used to determine whether students are reading at, above, or below their grade level. The test is administered to students individually and students are scored on their ability to read and retell text. Based on their scores and levels, teachers can then match students to books on their guided reading level.

The following graph gives an overview of the DRA levels and grade level expectations.

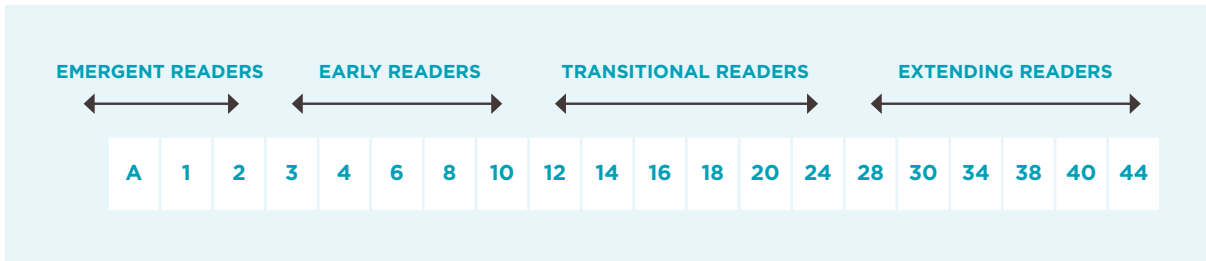


FIGURE 31:
DRA Levels and Grade Level Expectations

GRADE LEVEL EXPECTATIONS:

- LEVEL 3** Beginning of Gr. 1
- LEVEL 16** End of Gr. 1 – Beginning of Gr. 2
- LEVEL 28** End of Gr. 2 – Beginning of Gr. 3
- LEVEL 38** End of Gr. 3

The DRA Comprehension Rubric is also used to measure a student’s understanding of text, with possible scores in the categories of Little Comprehension, Some Comprehension, Adequate Comprehension, and Exceeding Comprehension.

DISTRIBUTION OF GRAPESEED IN PRESCHOOL AND KINDERGARTEN

Of the 114 students in the Kindergarten file, 41 (36%) did not receive GrapeSEED while 73 (64%) did receive GrapeSEED in kindergarten. The table below shows the distribution from preschool to kindergarten in receipt of GrapeSEED.

	FREQUENCY	PERCENT
No GrapeSEED in either preschool or kindergarten	32	28.1
GrapeSEED in preschool, no GrapeSEED in kindergarten	9	7.9
No GrapeSEED in preschool, GrapeSEED in kindergarten	50	43.9
GrapeSEED in both preschool and kindergarten	23	20.2
TOTAL	114	100.0

TABLE 15:
Distribution of GrapeSEED from Preschool to Kindergarten

DRA SCORES FROM FALL TO SPRING

For the DRA Text Level, the Fall score had no variability – every student started at level 1. Thus, all differences observed were relative to the same baseline.

Students Made Larger Gains from Mid-year to Spring

When contrasting only those who did and did not receive GrapeSEED in kindergarten, there was a marginally significant difference in linear change ($p = .09$) and a significant change in gains from mid-year to Spring ($p = .04$). These students made somewhat larger gains in the second half of the year compared to the first, suggesting that the more GrapeSEED the students receive, the more significant the gains in this area.

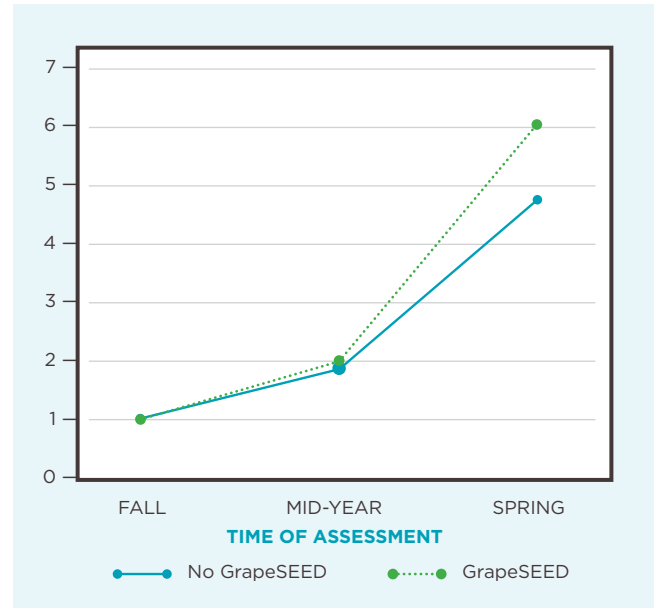


FIGURE 32:
Performance Based on Receipt of GrapeSEED in Kindergarten

TESTS OF WITHIN-SUBJECTS CONTRASTS

SOURCE	TIME	TYPE III SUM OF SQUARES	df	MEAN SQUARE	F	SIG.
TIME	Linear	865.097	1	865.097	60.650	.000
	Quadratic	98.817	1	98.817	24.966	.000
Time * GrpSEEDKndgtn	Linear	35.693	1	35.693	2.464	.091
	Quadratic	13.484	1	13.484	3.407	.042

DESCRIPTIVE STATISTICS

	RECEIVED GRAPESEED IN KINDERGARTEN	MEAN	STD. DEV.	N
Fall DRA Text Level	No GrapeSEED in kindergarten	1.00	.000	36
	GrapeSEED in kindergarten	1.00	.000	63
	Total	1.00	.000	99
Mid-Year DRA Text Level	No GrapeSEED in kindergarten	1.83	.811	36
	GrapeSEED in kindergarten	1.97	.782	63
	Total	1.92	.791	99
Year End DRA Text Level	No GrapeSEED in kindergarten	4.61	2.998	36
	GrapeSEED in kindergarten	6.08	6.290	63
	Total	5.55	5.361	99

TABLE 16:
Descriptive Statistics Based on Receipt of GrapeSEED in Kindergarten

DRA SCORES FROM FALL TO SPRING (CONTINUED)

When considering whether or not the child received GrapeSEED in preschool, there continued to be a marginal difference in both linear change ($p = .07$) and the difference in change over the two intervals, from Fall to mid-year and mid-year to Spring ($p = .10$).

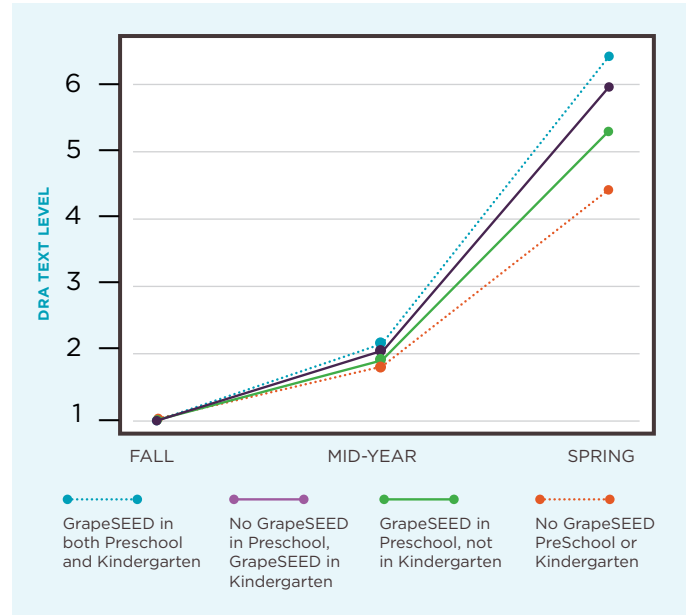


FIGURE 33: Performance Based on Receipt of GrapeSEED in Preschool and Kindergarten

There were no significant differences in gains by Gender ($p=.31$), Ethnicity ($p=.72$), Special Education Status ($p=.28$), English Language Status ($p=.40$), Lunch Status ($p=.14$), Great Start Student ($p=.25$), Age Group at start of kindergarten ($p=.20$), or by Absence Level ($p=.56$) after taking the GrapeSEED level into account.

TESTS OF WITHIN-SUBJECTS CONTRASTS

SOURCE	TIME	TYPE III SUM OF SQUARES	df	MEAN SQUARE	F	SIG.
TIME	Linear	738.868	1	738.868	50.900	.000
	Quadratic	83.010	1	83.010	20.557	.000
TIME * GRPSEED LVL	Linear	159.909	3	53.303	3.672	.071
	Quadratic	30.031	3	10.010	2.479	.098

DESCRIPTIVE STATISTICS

	GRAPSEED FROM PRESCHOOL TO KINDERGARTEN	MEAN	STD. DEV.
Fall DRA Text Level	No GrapeSEED in either preschool or kindergarten	1.00	.000
	GrapeSEED in preschool, no GrapeSEED in kindergarten	1.00	.000
	No GrapeSEED in preschool, GrapeSEED in kindergarten	1.00	.000
	GrapeSEED in both preschool and kindergarten	1.00	.000
Mid-Year DRA Text Level	No GrapeSEED in either preschool or kindergarten	1.78	.847
	GrapeSEED in preschool, no GrapeSEED in kindergarten	2.00	.707
	No GrapeSEED in preschool, GrapeSEED in kindergarten	1.90	.821
	GrapeSEED in both preschool and kindergarten	2.10	.700
Year End DRA Text Level	No GrapeSEED in either preschool or kindergarten	4.37	3.078
	GrapeSEED in preschool, no GrapeSEED in kindergarten	5.33	2.784
	No GrapeSEED in preschool, GrapeSEED in kindergarten	5.93	6.482
	GrapeSEED in both preschool and kindergarten	6.38	6.029

TABLE 17: Descriptive Statistics Based on Receipt of GrapeSEED in Preschool and Kindergarten

DRA TEXT LEVEL BY YEAR (COHORT)

Scores Improved Significantly with GrapeSEED

Although the focus of GrapeSEED is oral language development, kindergarten DRA Text Level scores improved significantly with GrapeSEED. The large impact in 2013-2014 may be related to the fact that a number of students also received GrapeSEED as preschool students. DRA Text Level scores were compared with two years of kindergarten Text Level scores from 2010-2011 and 2012-2013.

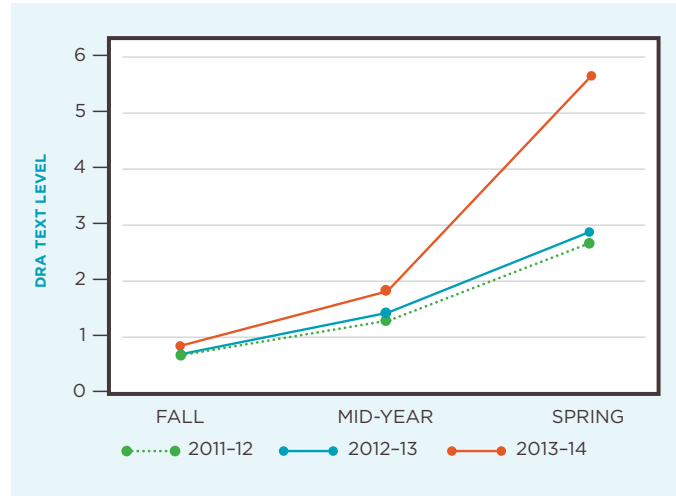


FIGURE 34:
Performance in Kindergarten Compared with Groups Who Did Not Receive GrapeSEED

REPORT

COHORT		DRAtxtfall	DRAtxtmid	DRAtxtspr
2.00 2011-12	Mean	.5000	1.2963	2.5000
	N	28	27	28
	Std. Deviation	.79349	2.43081	4.01386
3.00 2012-13	Mean	.5435	1.4200	2.8600
	N	23	25	25
	Std. Deviation	.14405	.93184	1.35800
4.00 2013-14	Mean	.7609	1.8333	5.7083
	N	69	69	72
	Std. Deviation	.26580	.86885	5.97515
TOTAL	Mean	.5878	1.4932	3.9578
	N	148	148	154
	Std. Deviation	.47278	1.31835	4.78456

TABLE 18:
Descriptive Statistics for DRA Text Scores in Kindergarten

DEMOGRAPHICS

These are the subgroups the researchers compared as they were looking at each test. All of these demographics have enough variability to warrant investigation.

CHARACTERISTIC		OVERALL PERCENT	NO GRAPESEED PERCENT	RECEIVED GRAPESEED PERCENT
GENDER	Female	50.0	52.0	46.3
	Male	50.0	48.0	53.7
ETHNICITY	Black	22.8	24.4	21.9
	White	49.1	48.8	49.3
	Hispanic	14.9	17.1	13.7
	Other Ethnicity	13.2	9.8	15.1
IDENTIFIED AS SPECIAL NEEDS	Hearing Impaired, Special Education Cert.	9.6	9.8	9.6
ENGLISH LANGUAGE STATUS	Designated English as a Second Language (ESL), Limited English Proficient (LEP), or both	22.8	21.9	24.4
LUNCH STATUS	Received free/reduced lunch	58.8	61.0	57.5
GREAT START STUDENT		21.1	14.6	24.7
RECEIVED GRAPESEED IN BS PRESCHOOL		28.1	22.0	31.5
AGE GROUP (START OF SCHOOL)	Five years or younger	25.4	29.3	23.3
	Between five years and 5 years and 6 months	42.1	34.1	46.6
	Older than 5 years and 6 months	32.5	36.6	30.1
ABSENCE LEVEL	9 or fewer absences	55.3	46.3	60.3
	More than 9 absences	44.7	53.7	39.7

TABLE 19: Demographics Analysis for Kindergarten DRA Assessment

SUMMARY OF RESULTS

Those students who received GrapeSEED did significantly better on the DRA Text Level assessments than those who did not receive GrapeSEED. Those students who received GrapeSEED in both preschool and kindergarten scored higher than those receiving only one year of GrapeSEED.

CLINTONDALE COMMUNITY SCHOOLS

At-Risk Grade 1 Assessments: DRA, MLPP



ABOUT THE ASSESSMENT

This study, spanning a period of three years, conducted at the Parker Elementary School, part of Clintondale Community Schools in Michigan, was designed to evaluate the effectiveness of GrapeSEED when used with English-speaking kindergarten and first grade students from an economically deprived area (100% Free and Reduced Lunch).

The challenge was that these children often times were speaking their own dialect of English, or a cultural language. So in many ways, Standard English was like a second language for these children. A related factor was that the students were taught by multiple teachers with varying abilities and styles.

In this study, teachers were trained to deliver the program according to the established procedures. From September to May 2014, three kindergarten teachers delivered 100, 100, and 98 lessons, respectively. Four first grade teachers delivered 148, 136, 157, and 157 lessons, respectively. Lessons varied from twenty to forty minutes. A total of 71 kindergarten students received GrapeSEED, participating in an average of 82 lessons. A total of 85 first grade students received GrapeSEED, participating in an average of 128 lessons.

To evaluate the impact of the program on literacy, all students were assessed in the Fall, mid-year, and Spring using the Developmental Reading Assessment (DRA) Text Level and Comprehension Rubric, and three assessments from the Michigan Literacy Progress Profile (MLPP): Known Words Assessment, Concepts About Print, and Hearing and Recording Sounds in Words. In addition, kindergarten students were assessed using the MLPP measure of Expressive Oral Language. Results of the DRA Text Level assessments were compared to the benchmarks established by researchers at the University of Arkansas.

ABOUT DRA

The Developmental Reading Assessment (DRA) is a standardized test used to determine whether students are reading at, above, or below their grade level. The test is administered to students individually and students are scored on their ability to read and retell text. Based on their scores and levels, teachers can then match students to books on their guided reading level.

The following graph gives an overview of the DRA levels and grade level expectations.

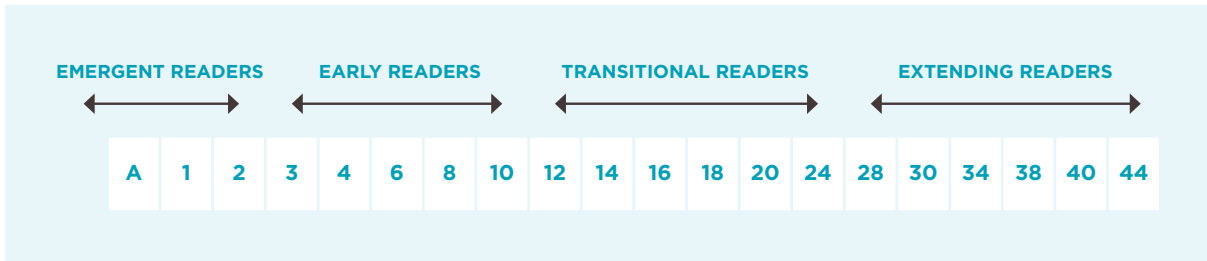


FIGURE 35:
DRA Levels and Grade Level Expectations

GRADE LEVEL EXPECTATIONS:
LEVEL 3 Beginning of Gr. 1
LEVEL 16 End of Gr. 1 – Beginning of Gr. 2
LEVEL 28 End of Gr. 2 – Beginning of Gr. 3
LEVEL 38 End of Gr. 3

The DRA Comprehension Rubric is also used to measure a student’s understanding of text, with possible scores in the categories of Little Comprehension, Some Comprehension, Adequate Comprehension, and Exceeding Comprehension.

DRA TEXT LEVEL

Students Made Larger Gains from Mid-year to Spring

There was a significant change in scores from Fall to Spring, with the most significant change in gains from mid-year to Spring. This suggests that the more GrapeSEED the students receive, the more significant the gains in this area.

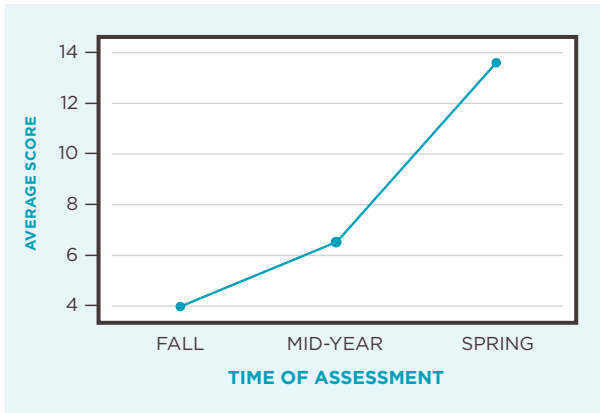


FIGURE 36:
Grade 1 Gains in DRA Text Level

These results are highly significant, meaning they could not happen by chance ($p < .0001$). Some students have surpassed the DRA Text Level benchmarks of 10-12 by the second half of the year.

The First Grade Spring DRA Text Level scores were compared to the Meets/Exceeds Proficiency benchmark standards developed by researchers at the University of Arkansas. Two-thirds of the first grade students met or exceeded proficiency on those standards.

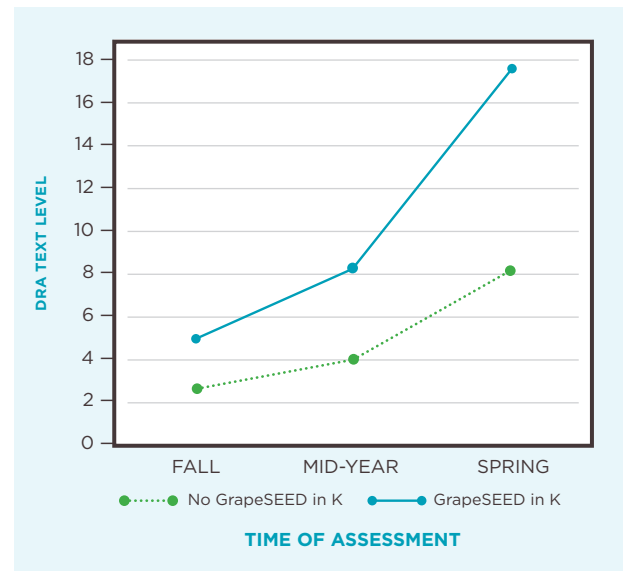


FIGURE 37:
Grade 1 Students Differences in DRA Achievement by Prior Kindergarten GrapeSEED

	FREQUENCY	PERCENT	VALID	CUMULATIVE
Did not meet Benchmark	27	34	34	34
Meets or Exceeds Benchmark	53	66	66	66
TOTAL	80	100.0	100.0	100.0

TABLE 20
Grade 1 Students Who Met or Exceeded End-of-Year Benchmark DRA

However, all of those students who received GrapeSEED as kindergarten students met or exceeded the benchmark standard.

	NO GRAPESEED IN K	GRAPESEED IN K	TOTAL
Did not meet Benchmark	27	0	27
Meets or Exceeds Benchmark	14	39	53
TOTAL	41	39	80

TABLE 21
Grade 1 Students Receiving GrapeSEED Who Met or Exceeded End-of-Year Benchmark DRA

DRA COMPREHENSION RUBRIC

Students Made Larger Gains from Mid-year to Spring

There was significant linear change from Fall to Spring, with the most significant change in gains from mid-year to Spring. These students made all of their gains in the second half of the year compared to the first.

Significant linear change from Fall to Spring: $F = 6.92$, $p < .011$

The change in gains was more significant from mid-year to Spring: $F = 5.01$, $p < .029$.

DESCRIPTIVE STATISTICS

	MEAN	STD.
Fall 2013 DRA Comp Rubric	21.52	1.813
Mid-Yr. 2013-14 DRA Comp Rubric	21.49	1.876
Yr. End 2014 DRA Comp Rubric	22.39	2.116

TESTS OF WITHIN-SUBJECTS CONTRASTS

SOURCE	TIME	TYPE III SUM OF SQUARES	df	MEAN SQUARE	F	SIG.
Time	Linear	23.338	1	23.338	6.918	.011
	Quadratic	8.765	1	8.765	5.005	.029

TABLE 22
Descriptive Statistics for DRA Comprehension Rubric

Students Exceed Grade Level and Demonstrate High-Level Thinking

At the end of first grade, a score of 17-21 is Adequate Comprehension. A score of 22-24 is Exceeding Comprehension expectations for first grade. Not only were the students' text levels exceeding grade level, but so was their comprehension, which shows the students demonstrated an ability to think at a higher level.

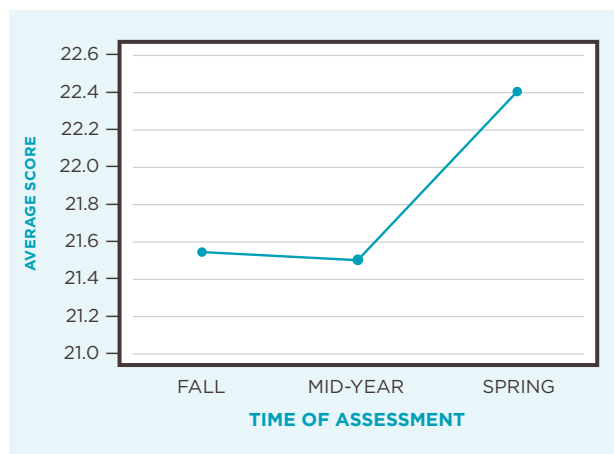


FIGURE 38:
Grade 1 Gains in DRA Comprehension Rubric

ABOUT MLPP

The Michigan Literacy Progress Profile (MLPP) is made up of a group of assessments designed to track and promote literacy growth for students in Michigan through second grade. The goal is to help all students achieve literacy by the beginning of third grade.

Students are given points for correct answers or demonstrating comprehension. The tests are generally administered to students individually multiple times per year. For this study, assessments were administered in Fall, mid-year, and Spring. The following table provides a brief description of each assessment:

ASSESSMENT	DESCRIPTION
Known Words	Measures how easily students remember and understand high-frequency words.
Concepts about Print	Measures what students have learned about the logistics of reading language in print, for example: where to start reading, reading from left to right, and knowing the differences between pictures and text.
Hearing and Recording Sounds in Words	Measures students' abilities to hear the sounds of letters and sound within words, which helps promote spelling, reading, and writing.
Expressive Oral Language	Measures students' abilities to communicate verbally, demonstrating proper use of sentence structure, vocabulary, and elaboration of ideas.

TABLE 23:
MLPP Assessment Descriptions

MLPP KNOWN WORDS

To maximize the sample size, year-end scores were used for both kindergarten and first grade. There was significant gain from kindergarten to first grade ($F = 147.97, p < .001$).

There were no significant differences in gains by gender ($p = .45$), by special needs ($p = .90$), by age group ($p = .61$), or by absence level ($p = .80$).

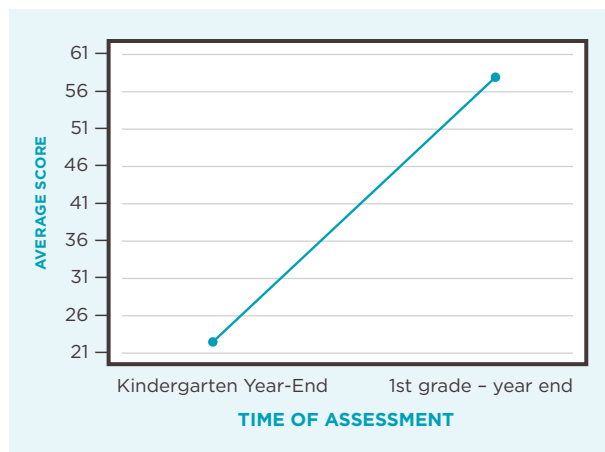


FIGURE 39:
Grade 1 Gains in MLPP Known Words

MLPP CONCEPTS ABOUT PRINT

To maximize the sample size, year-end scores were used for both kindergarten and first grade. There was no significant gain from kindergarten to first grade ($F = 2.16$, $p = .18$). The ceiling on the assessment may have been responsible for this finding, because the year-end kindergarten average score was very close to the top of the scale ($M = 21.83$, $SD = 0.79$).

MLPP HEARING AND RECORDING SOUNDS

To maximize the sample size, year-end scores were used for both kindergarten and first grade. There was significant gain from kindergarten to first grade ($F = 28.73$, $p < .001$).

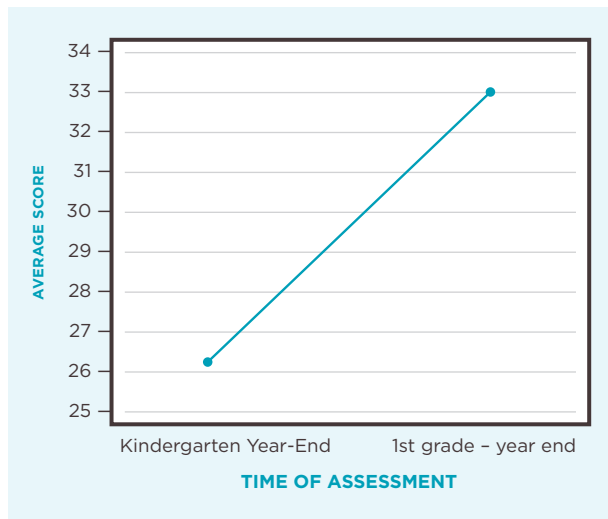


FIGURE 40:
Grade Gains in MLPP Hearing and Recording Sounds

ABSENTEEISM IMPACT

DRA Comprehension Rubric

There was a significant difference over time by absence level ($F = 3.52, p = .04$).

The student who had more than 9 absences actually began the year ahead, but because of his absences, he fell significantly behind.

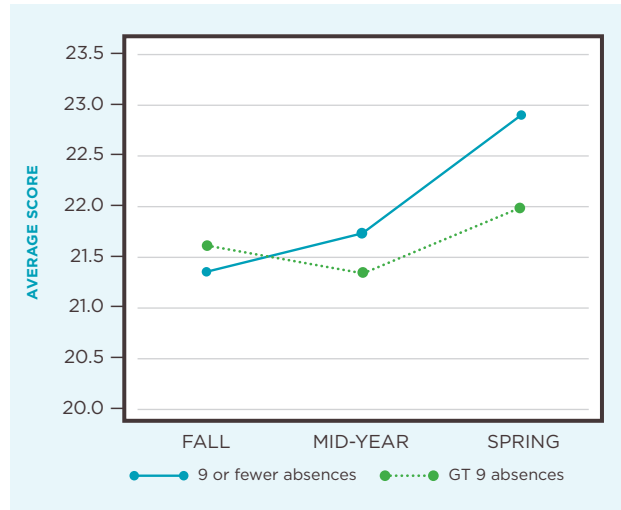


FIGURE 41:
Grade 1 Gains in DRA Comprehension Rubric by Absence Level

SUMMARY OF RESULTS

- ✦ The first grade students demonstrated significant growth on all assessments except Concepts about Print. That result was probably due to the ceiling of the test, since students' kindergarten scores were very close to the top of the scale.
- ✦ Two-thirds of the first grade students achieved the DRA Text level benchmark established by the University of Arkansas; however, 100% of those students who received GrapeSEED in kindergarten and first grade achieved the DRA Text Level benchmark.
- ✦ Students' DRA Comprehension Rubric text levels, as well as their comprehension, exceeded grade level, showing the students' ability to think at a higher level.
- ✦ Student absences limited the achievement of some students on two of the assessments, and Special Needs status limited achievement on one assessment.

CLINTONDALE COMMUNITY SCHOOLS

At-Risk Grade 2

Duration: 3 Years

Assessments: DRA



ABOUT THE ASSESSMENT

This study, spanning a period of three years, conducted at the Parker Elementary Schools, part of Clintondale Community Schools in Michigan, was designed to evaluate the effectiveness of GrapeSEED when used with English-speaking kindergarten and first grade students from an economically deprived area (100% Free and Reduced Lunch).

The challenge was that these children often times were speaking their own dialect of English, or a cultural language. So in many ways, Standard English was like a second language for these children. A related factor was that the students were taught by multiple teachers with varying abilities and styles.

DO GAINS CARRY OVER INTO HIGHER GRADES

Researchers wanted to find out if the gains from GrapeSEED were holding even after students had left the program. These second grade students did not receive GrapeSEED and, therefore, went a year without any GrapeSEED lessons.

To evaluate the impact of the program on literacy, all students were assessed using the Developmental Reading Assessment (DRA) Text Level and Comprehension Rubric. Results of the DRA Text Level assessments were compared to the benchmarks established by researchers at the University of Arkansas.

ABOUT DRA

The Developmental Reading Assessment (DRA) is a standardized test used to determine whether students are reading at, above, or below their grade level. The test is administered to students individually and students are scored on their ability to read and retell text.

Based on their scores and levels, teachers can then match students to books on their guided reading level.

The following graph gives an overview of the DRA levels and grade level expectations.

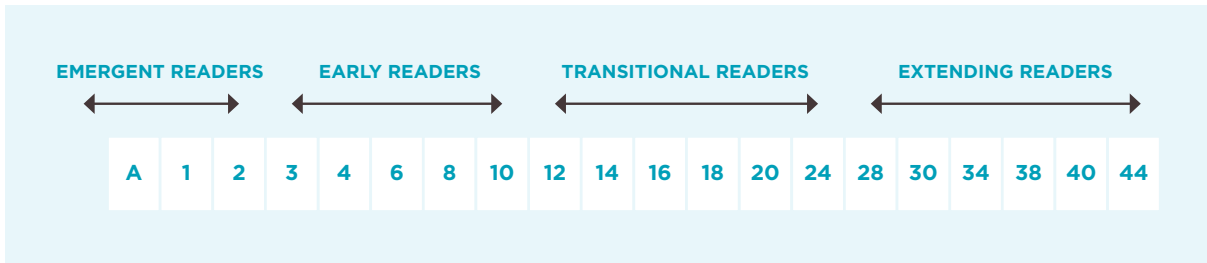


FIGURE 42:
DRA Levels and Grade Level Expectations

GRADE LEVEL EXPECTATIONS:
LEVEL 3 Beginning of Gr. 1
LEVEL 16 End of Gr. 1 – Beginning of Gr. 2
LEVEL 28 End of Gr. 2 – Beginning of Gr. 3
LEVEL 38 End of Gr. 3

Starting from the left, the following chart compares children who received no GrapeSEED to children who received GrapeSEED only in kindergarten, only in first grade, and those who received GrapeSEED in both kindergarten and in first grade. Clearly, the children who received the most GrapeSEED performed the best on their DRA (reading test) scores.

To determine the longitudinal impact of GrapeSEED training, we compared the DRA scores of second grade students who received no GrapeSEED with those who received GrapeSEED in kindergarten and/or first grade. The data confirm that GrapeSEED has a positive impact on second grade students' DRA scores. The more GrapeSEED a student received the better they performed on DRA or in research showed the "Dose Effect".

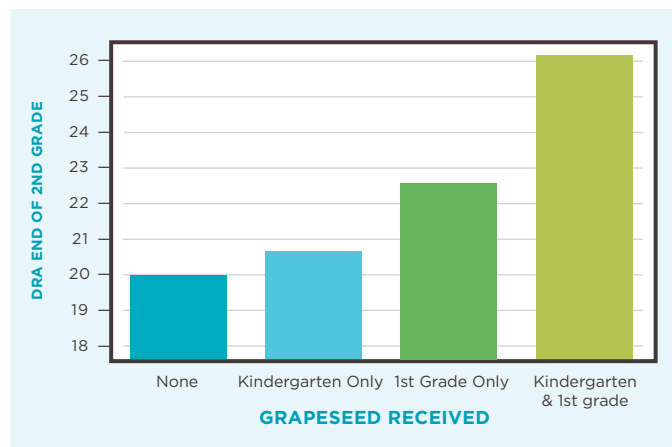


FIGURE 43:
The "Dose Effect" in Evidence — More GrapeSEED Meant Larger Gains

	N	MEAN	STD. DEV.
No GrapeSEED in either Kindergarten or 1st	19	20.00	7.055
GrapeSEED in Kindergarten, not in 1st	3	20.67	7.024
No GrapeSEED in Kindergarten, GrapeSEED in 1st	14	22.57	5.402
GrapeSEED in both Kindergarten and 1st	40	26.10	4.706
TOTAL	76	23.71	6.081

ANOVA

	SUM OF SQUARES	df	MEAN SQUARE	F	SIG.
BETWEEN GROUPS	535.936	3	178.645	5.748	.001
WITHIN GROUPS	2237.695	72	31.079		
TOTAL	2773.632	75			

TABLE 24:
Descriptive Statistics Showing the “Dose Effect”

GAINS CARRY OVER INTO HIGHER GRADES

Finally, the researchers pointed out a finding of great importance to educators: the gains from GrapeSEED were sticking with the children, even after they had left the program. These second grade students did not receive GrapeSEED and, therefore, went a year without any GrapeSEED lessons. GrapeSEED had a significant and lasting effect on their DRA scores ($p < .001$). The data show that the GrapeSEED students performed better than those receiving no GrapeSEED in kindergarten and first grade.

The data also demonstrates a “proximity effect”; the closer the GrapeSEED training to the assessment, the better the students’ scores. This finding, along with the “dose effect”, is particularly important, since it implies that the effects of GrapeSEED continue to increase even after the students no longer participate in the program.

This longitudinal piece negates the “implementation effect” in research. Often during research studies teachers work diligently to carry out a program with fidelity, but that effect goes away with time. This study shows students continuing to improve over multiple years.

CONCLUSIONS

- ✘ It is important to move students out of the “at risk” category to eliminate their need for an intervention, to improve their self-concept, and to help schools financially — the faster, the better. GrapeSEED was able to do this.
- ✘ School districts are not just asked to show student growth in these areas but are tasked with closing the gap for the subgroups. The research clearly shows that GrapeSEED closed the achievement gap.
- ✘ National research shows that ESL children typically take 6–8 years to reach grade level proficiency. GrapeSEED students, however, reached proficiency in reading in just 2–3 years.
- ✘ The kindergarten students, regardless of gender, age, or special needs status, demonstrated significant growth on all assessments. In four out of the five assessments, the gains were more significant from mid-year to Spring.
- ✘ Nearly all of the kindergarten students (97.2%) achieved the DRA Kindergarten Level benchmark established by the University of Arkansas. Students also exceeded the national norms in the MLPP Sight Word/Decodable Word List and Concepts about Print areas.
- ✘ Boys outperformed girls in the 2012-13 Sight Word assessment — a big surprise since girls usually perform better than boys at the elementary level — showing how GrapeSEED promotes the literacy achievement for both groups because the focus is on teaching procedures, oral language, and critical listening.
- ✘ Those students who received GrapeSEED did significantly better on the DRA Text Level assessments than those who did not receive GrapeSEED. Those students who received GrapeSEED in both preschool and kindergarten scored higher than those receiving only one year of GrapeSEED.
- ✘ The first grade students demonstrated significant growth on all assessments except Concepts about Print. That result was probably due to the ceiling of the test, since students’ kindergarten scores were very close to the top of the scale.
- ✘ Two-thirds of the first grade students achieved the DRA Text level benchmark established by the University of Arkansas; however, 100% of those students who received GrapeSEED in kindergarten and first grade achieved the DRA Text Level benchmark.
- ✘ The students’ DRA Comprehension Rubric text levels and their comprehension exceeded grade level, showing the students’ ability to think at a higher level.
- ✘ The researchers took note of the so-called “dose effect”. The more GrapeSEED the children received, the better their performance.
- ✘ Finally, the researchers pointed out a finding of great importance to educators: the gains from GrapeSEED were sticking with the children, even after they had left the program.