

Reading Success by Risk Zones

Zones of success described earlier as green for on target, yellow for in need, and red for critically in need were analyzed for kindergarten through second grade and then by gender and race/ethnicity. The Pearson’s Chi-Square was used to detect significant changes across administration periods for each grade. Table 23 summarizes the results. Success is an increase in green due to movement from yellow or red to green, a reduction in yellow or red, as well as at least no movement to red. There was a statistically significant change in categorization for all grade levels. In nearly all cases students transition more to the yellow and green zone from Fall to Spring. However the reduction in the number of students in the red zone is only seen among kindergarten and second grade students. For first grade students, the number of students in the red zone, although not exceeding 10% of all students, increased in Spring. This analysis confirmed that the program is having a positive impact on zone categorization for the majority of student participants.

Table 23. 2020-2021 Summary of Students in Reading Success Zones by Assessment Period and Grade

Grade	Period	Red		Yellow		Green		χ^2	p-value
		N	%	N	%	N	%		
K	Fall	3	3.3	60	65.9	28	30.8	32.02	.000
	Winter	4	4.0	49	48.5	48	47.5		
	Spring	1	1.0	28	28.0	71	71.0		
1	Fall	9	5.4	125	74.4	34	20.2	56.66	.000
	Winter	17	10.4	73	44.5	74	45.1		
	Spring	17	10.9	54	34.6	85	54.5		
2	Fall	34	22.1	114	74.0	6	3.9	30.57	.000
	Winter	51	33.3	91	59.5	11	7.2		
	Spring	16	10.7	112	75.2	21	14.1		

Examining the success zones across grades, kindergarten had a substantial increase in the number of students in the green category which appeared to yellow category children moving up. For first grade, there is a marked increase from Fall to Spring in the green zone, but with a slight increase for students in the red category by the end of the Spring term. For second grade students, a marked increase in green category children occurred, but the majority of students remained in the yellow category. Although there was a decrease in the number of students in the red zone by the end of the Spring period, this number increased during the Winter period and was attributed to movement from the yellow to the red zone. It is unknown whether those categorized as red have any documented or possible learning disability. In an attempt to better understand the fluctuations in the success zones, the progress of each student was reviewed individually and within each grade to see where changes in category tended to occur. In nearly all cases, the movement tended to be from yellow to green, or vice versa, with limited movement from red to yellow. New red categorized students always came from the low end of the yellow category.

Gender was controlled and ANOVA's completed to assess for significance of possible changes in success zone categories across administration periods and by grade (K-2) in Table 24. Male and female kindergarten students had similar changes with increased in green from yellow. The majority of red categorized students were initially males but by the end of the Spring term the majority was female. For first grade students, both genders had increases from Fall to Winter in the red category and substantial movement from yellow to green. In second grade, both genders increased in the red category from Fall to Winter and substantially decreased from Winter to Spring. The number of green students increased steadily for males and females.

Table 24. 2020-2021 Summary of Students in Reading Success Zones by Assessment Period, Grade, and Gender

Grade	Period	Red		Yellow		Green		χ^2	p-value
		N	%	N	%	N	%		
Male Students									
K	Fall	3	5.7	36	67.9	14	26.4	26.49	.000
	Winter	2	3.7	25	46.3	27	50.0		
	Spring	0	0.0	14	25.0	42	75.0		
1	Fall	5	5.7	69	79.3	13	14.9	36.38	.000
	Winter	10	11.5	38	43.7	39	44.8		
	Spring	10	11.9	31	36.9	43	51.2		
2	Fall	21	26.9	55	70.5	2	2.6	19.49	.001
	Winter	31	38.8	44	55.0	5	6.3		
	Spring	11	13.9	56	70.9	12	15.2		
Female Students									
K	Fall	0	0.0	24	63.2	14	36.8	9.78	.044
	Winter	2	4.3	24	51.1	21	44.7		
	Spring	1	2.3	14	31.8	29	65.9		
1	Fall	4	4.9	56	69.1	21	25.9	22.00	.000
	Winter	7	9.1	35	45.5	35	45.5		
	Spring	7	9.7	23	31.9	42	58.3		
2	Fall	13	17.1	59	77.6	4	5.3	12.29	.015
	Winter	20	27.4	47	64.4	6	8.2		
	Spring	5	13.2	56	80.0	9	12.9		

Table 25 summarizes race/ethnicity and success zone by grade and administration period. There was a significant positive change for African-American, Hispanic and White kindergarten students, as well as for African-American and White first graders, and Hispanic and White second grade students. White kindergarten students showed a slight increase (one student) in the red category. For first grade students, there was a significant change toward upper level

yellow and green categories for all race/ethnicity categories with the exception of Hispanic students. White students labeled as red also increased from Fall to Spring.

In second grade, African-American students did not make statistically significant changes from Fall to Spring. Hispanic and White students had a spike in the number of red categorized children in the Winter period but a drop in the number of children in the red zone by the Spring period.

Table 25. 2020-2021 Summary of Students in Reading Success Zones by Grade and Race/Ethnicity

Race Ethnicity	Period	Red		Yellow		Green		χ^2	p-value
		N	%	N	%	N	%		
Kindergarten Students									
A-A	Fall	1	2.3	23	53.5	19	44.2	11.15	.025
	Winter	0	0.0	23	47.9	25	52.1		
	Spring	0	0.0	14	26.4	39	73.6		
Hispanic	Fall	2	6.1	24	72.7	7	21.2	16.58	.002
	Winter	4	11.4	19	54.3	12	34.3		
	Spring	0	0.0	9	32.1	19	67.9		
White	Fall	0	0.0	12	85.7	2	14.3	13.55	.009
	Winter	0	0.0	7	41.2	10	58.8		
	Spring	1	5.9	4	23.5	12	70.6		
Grade 1 Students									
A-A	Fall	6	9.5	42	66.7	15	23.8	20.50	.000
	Winter	8	14.3	24	42.9	24	42.9		
	Spring	5	9.8	14	27.5	32	62.7		
Hispanic	Fall	3	6.3	36	75.0	9	18.8	8.23	NS
	Winter	6	11.5	26	50.0	20	38.5		
	Spring	5	9.8	26	51.0	20	39.2		
White	Fall	0	0.0	39	88.6	5	11.4	40.33	.000
	Winter	3	7.0	17	39.5	23	53.5		
	Spring	7	16.3	11	25.6	25	58.1		
Grade 2 Students									
A-A	Fall	7	15.2	38	82.6	1	2.2	5.40	NS
	Winter	10	20.8	35	72.9	3	6.3		
	Spring	4	8.3	39	81.3	5	10.4		
Hispanic	Fall	15	25.0	40	66.7	5	8.3	10.44	.034
	Winter	18	32.1	32	57.1	6	10.7		
	Spring	5	9.1	40	72.7	10	18.2		
White	Fall	6	18.2	27	81.8	0	0.0	14.04	.007
	Winter	13	37.1	20	57.1	2	5.7		
	Spring	2	6.1	27	81.8	4	12.1		