Examining the Use of DIBELS Nonsense Word Fluency Across Grade Levels in *Reading First* Schools

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Background Information

✓ Recent research examining the utility of NWF in predicting reading outcomes

- Speece, Mills, Ritchey, & Hillman (2003)
  - Examined predictive validity of NWF in kindergarten for explaining ORF outcomes in first grade.

- Fuchs, Fuchs, & Compton (2004)
  - Examined Word Identification Fluency (WIF) and NWF in first grade students

- Good (2004)
  - Examined NWF initial skill level and slope by risk group for first grade students

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Things to Note…

✓ For this study, data from students in Florida's first year of *Reading First* implementation were examined.

✓ DIBELS are given <u>four</u> times per year in Florida's *Reading First* model.
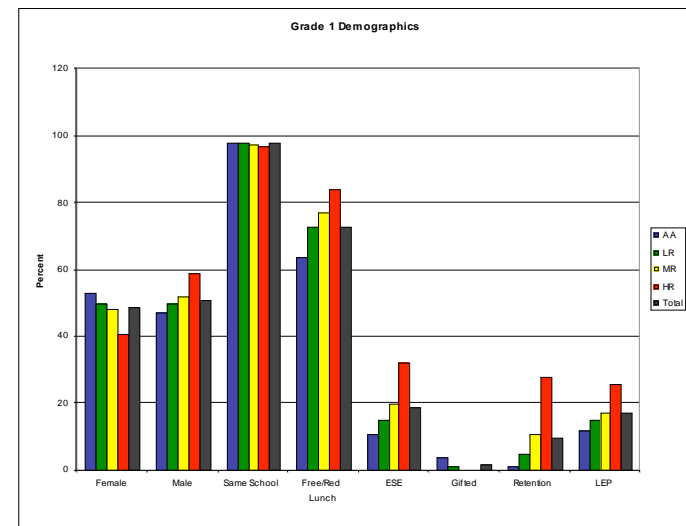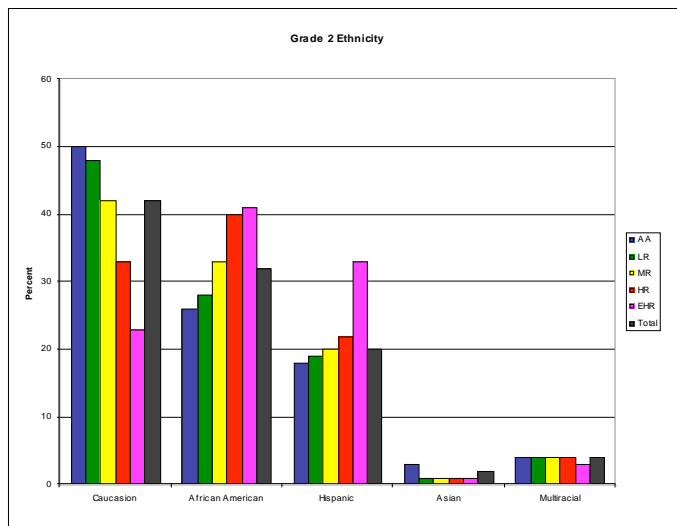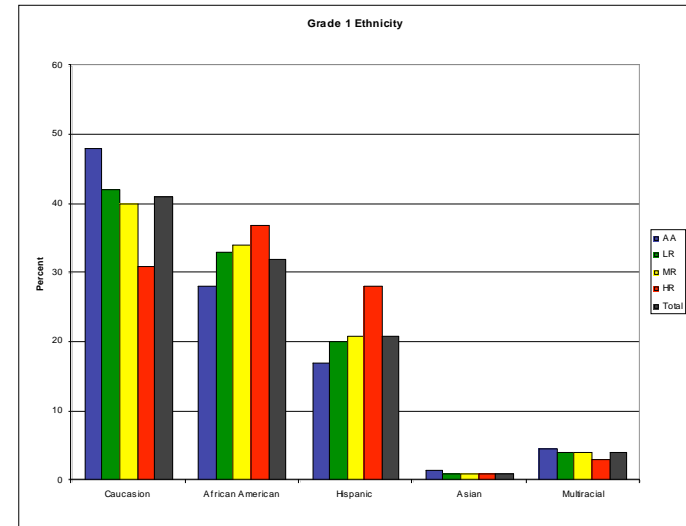
✓ NWF is given throughout the first <u>and</u> second grades.

NWF Scores Associated with Risk Levels for First and Second Grades

Risk Level	Grade 1	Grade 2
High Risk	0-12	0-29
Mod. Risk	13-23	30-49
Low Risk	24-31	50-71
Above Avg.	32+	72+

Questions of Interest

✓ Given Risk Status...
  - what is the role of Fall NWF level in predicting end of year reading outcomes?
  - what is the role of slope of NWF in predicting end of year reading outcomes?
  - what accounts for more variance, slope or Fall NWF level?

✓ Is there a difference in ORF growth rates based upon initial NWF risk status?

Grade 1 Ethnicity

Grade 2 Ethnicity

Grade 1 Demographics

Grade 2 Demographics

Grade 1 SAT-10 Percentiles

Grade 2 SAT-10 Percentiles
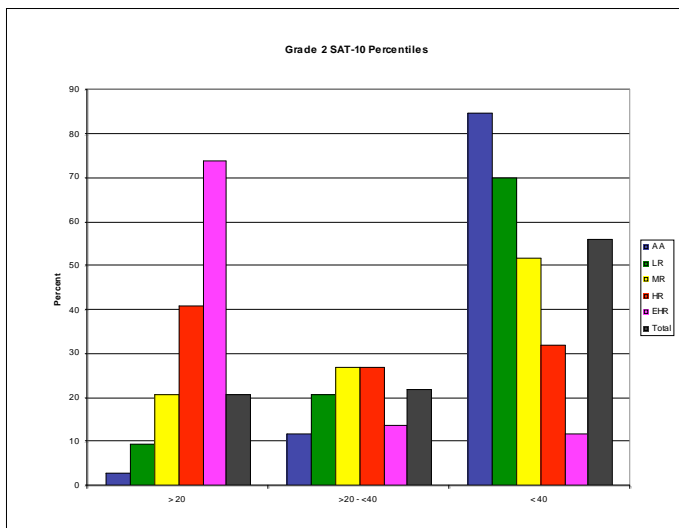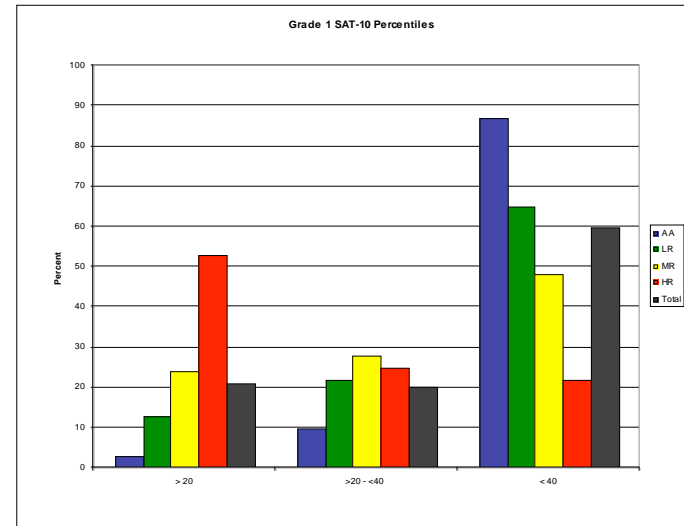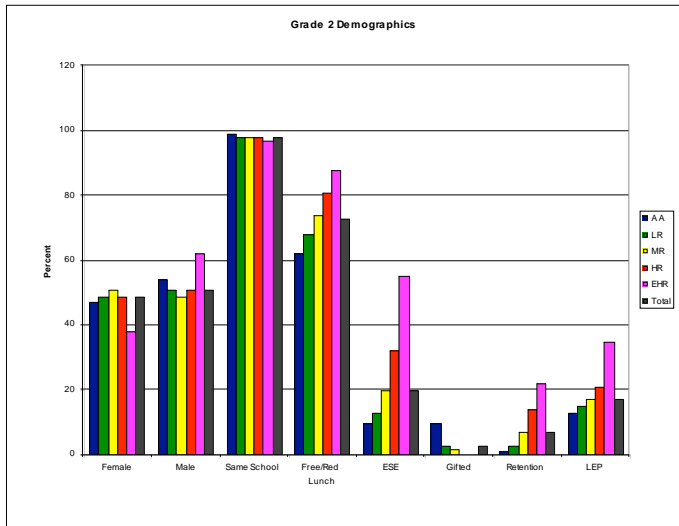
1st Grade Descriptive Statistics

Group	Beginning NWF			NWF Slope		
	N	Mean	Std. Dev.	N	Mean	Std. Dev
High Risk	6734	5.12	4.31	6734	1.18	.70
Moderate Risk	6622	18.12	3.13	6622	1.15	.75
Low Risk	4557	27.47	2.28	4557	1.06	.82
Above Average	11109	47.81	17.43	11109	1.14	1.01
Total	29022	27.09	20.44	29041	1.14	.86

End of Year ORF & SAT-10 By Risk Group: 1st Grade

Group*	Ending ORF N	Ending ORF Mean (SD)	SAT-10 Standard Score N	SAT-10 Standard Score Mean (SD)
High Risk	6717	23.34 (19.58)	6296	508.83 (37.75)
Moderate Risk	6611	38.17 (22.38)	6393	536.65 (39.53)
Low Risk	4543	47.47 (23.64)	4423	552.44 (39.93)
Above Average	11086	71.57 (31.56)	10883	582.58 (42.23)
Total	28976	48.96 (32.36)	27963	550.67 (49.57)

*Note: Risk status based upon initial NWF score.

Percent of Variance Explained in 1st Grade Oral Reading Fluency Outcomes

Percent of Variance Explained in Oral Reading Outcomes in 1st Grade By Risk Category

Group	Demog. Comp.	LEP	ESE	PPVT	NWF Initial Skills	NWF Slope
High Risk	3%	0%	6%	2%	4% (8%)	26% (26%)
Mod. Risk	2%	0%	2%	2%	2% (2%)	28% (21%)
Low Risk	2%	0%	2%	3%	1% (8%)	29% (21%)
Above Avg.	5%	<1%	6%	6%	24% (25%)	15% (11%)

Note: Data from Good (2004) are in parentheses.

Percent of Variance Explained in 1st Grade SAT-10 Outcomes

Percent of Variance Explained in SAT -10 Outcomes in 1st Grade By Risk Category

Group	Demog. Comp.	LEP	ESE	PPVT	NWF Initial Skills	NWF Slope	ORF Initial Skills	ORF Slope
High Risk	3%	<1%	7%	4%	4%	13%	9%	19%
Mod. Risk	3%	<1%	3%	6%	2%	13%	9%	20%
Low Risk	3%	<1%	3%	8%	1%	11%	10%	19%
Above Avg.	7%	<1%	5%	11%	6%	5%	5%	10%

2nd Grade Descriptive Statistics

Group	Beginning NWF N	Beginning NWF Mean	Beginning NWF Std. Dev.	NWF Slope N	NWF Slope Mean	NWF Slope Std. Dev
Extreme High Risk	1205	5.91	4.356	1205	.94	.82
High Risk	5084	22.56	4.68	5084	.96	.80
Moderate Risk	10338	39.52	5.62	10338	1.06	1.03
Low Risk	5980	58.50	6.17	5980	1.23	1.14
Above Average	4555	98.29	21.36	4555	.98	1.22
Total	27162	48.89	27.87	27162	1.06	1.05

End of Year ORF & SAT-10 By Risk Group: 2nd Grade

Group*	Ending ORF N	Ending ORF Mean (SD)	SAT-10 Standard Score N	SAT-10 Standard Score Mean (SD)
Extreme High Risk	1195	31.51 (27.71)	1112	541.71 (33.84)
High Risk	5058	58.14 (26.98)	4916	568.75 (37.29)
Moderate Risk	10308	75.24 (27.01)	10061	588.48 (36.92)
Low Risk	5965	92.87 (26.68)	5845	604.52 (35.59)
Above Average	4545	117 (28.11)	4469	621.04 (33.60)
Total	27102	80.98 (34.71)	26431	591.87 (41.08)

*Note: Risk status based upon initial NWF score.

Percent of Variance Explained in 2nd Grade Oral Reading Fluency Outcomes

Percent of Variance Explained in Oral Reading Outcomes in 2nd Grade By Risk Category

| Group	Demog. Comp.	LEP	ESE	PPVT	NWF Initial Skills	NWF Slope
Extreme High Risk	5%	<1%	23%	8%	4%	15%
High Risk	5%	0%	10%	3%	2%	15%
Mod. Risk	4%	0%	6%	3%	3%	18%
Low Risk	5%	0%	4%	5%	2%	14%
Above Avg.	6%	<1%	5%	7%	12%	5%

Percent of Variance Explained in 2nd Grade SAT-10 Outcomes

Percent of Variance Explained in SAT-10 Outcomes in 2nd Grade By Risk Category

Group	Demog. Comp.	LEP	ESE	PPVT	NWF Initial Skills	NWF Slope	ORF Initial Skills	ORF Slope
Extreme High Risk	4%	0%	17%	8%	1%	3%	13%	6%
High Risk	7%	<1%	10%	8%	1%	4%	17%	7%
Mod. Risk	9%	<1%	6%	11%	1%	4%	13%	5%
Low Risk	11%	<1%	4%	14%	1%	2%	8%	3%
Above Avg.	14%	1%	7%	15%	1%	<1%	4%	1%

Differences in Oral Reading Growth Rates Based on Initial NWF Risk Status

ORF Growth By Risk Category: 1st Grade

Group	N	Beginning NWF Mean	SD	ORF Slope Mean	SD
High Risk	6734	5.12	4.31	.78	.65
Moderate Risk	6622	18.12	3.13	1.18	.75
Low Risk	4557	27.47	2.28	1.40	.75
Above Average	11109	47.81	17.43	1.73	.78
Total	29022	27.94	20.44	1.33	.82

Oral Reading Fluency by NWF Risk Group--Grade 1
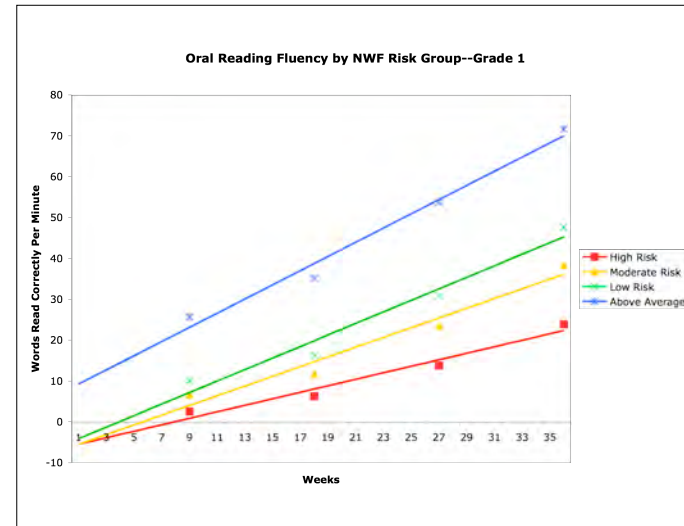
ORF Growth By Risk Category: 2nd Grade

Group	N	Beginning NWF Mean	SD	ORF Slope Mean	SD
Extreme High Risk	1205	5.91	4.35	.70	.62
High Risk	5084	22.56	4.68	1.01	.56
Moderate Risk	10338	39.52	5.62	1.15	.56
Low Risk	5980	58.50	6.17	1.23	.57
Above Average	4555	98.29	21.36	1.18	.64
Total	27162	48.89	27.87	1.13	.59

Oral Reading Fluency by NWF Risk Group--Grade 2
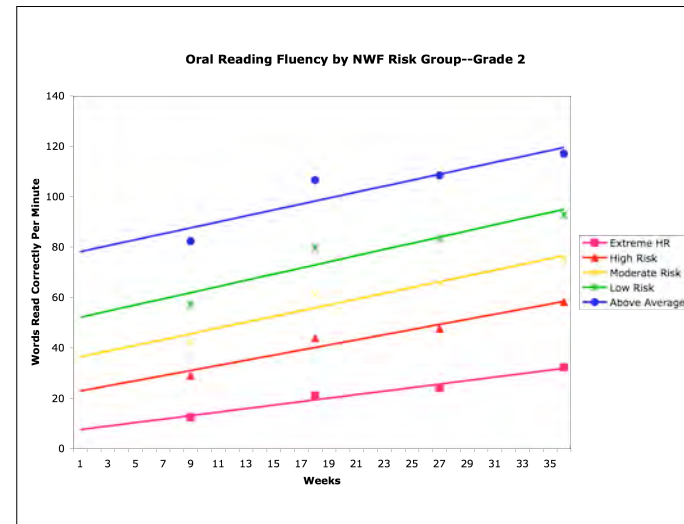
Conclusions

- NWF initial skill level & slope are important in predicting reading outcomes.
- Amount of variance explained differed by risk group examined, by grade level, & by outcome measure.
- NWF initial skill level appears to be most meaningfully related to oral reading growth in first grade and for the highest risk students at the beginning of 2nd grade.
- ORF appears to be a powerful predictor of SAT-10 outcomes even when children are still developing skills in alphabetic principle.

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References

- Fuchs, L. S. , Fuchs, D., & Compton, D. (2004). Monitoring early reading development in first grade: Word Identification Fluency versus Nonsense Word Fluency. *Exceptional Children, 17* (1), 7-21.
- Good, R.H., III, (March, 2004). *Monitoring progress and reviewing outcomes--Essential steps in the Outcomes Driven Model.* DIBELS Summit, Albuquerque, New Mexico.
- Good, R. H., III, Simmons, D.C., & Smith, S. B. (1998). Effective academic interventions in the United States: Evaluating and enhancing the acquisition of early reading skills. *School Psychology Review, 27*(1), 45-56.

References

- Speece, D. (2005). Hitting the moving target known as reading development: Some thoughts on screening children for secondary interventions. *Journal of Learning Disabilities, 38*(6), 487-493.
- Speece, D., Mills, C. Ritchey, K. D., & Hillman, E. (2003). Initial evidence that letter fluency tasks are valid indicators of early reading skill. *The Journal of Special Education, 36*, 223-233.
- Speece, D., & Ritchey, K. D. (2005). A longitudinal study of the development of oral reading fluency in young children at risk for reading failure. *Journal of Learning Disabilities, 38*(5), 387-399.