



Evaluation of the DELV-ST for 4-year-olds

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Purpose

The *Diagnostic Evaluation of Language Variation-Screening Test* (DELV-ST; Seymour, Roeper, & de Villiers, 2003a) was developed to estimate a child's rate of nonmainstream English and degree of risk for language impairment in various dialects of English. Research indicates that children's scores on the DELV-ST correlate with their scores on the *Diagnostic Evaluation of Language Variation-Criterion Referenced* (Seymour, Roeper, & de Villiers, 2003b). Nevertheless, the sensitivity and specificity values of the DELV-ST are not ideal (*Se* ranges from .52 to .73; *Sp* ranges from .76 to .90). Low sensitivity and specificity values can lead to fail rates that are incorrectly too high or too low.

Given that our university clinic serves private and public preschools and the sensitivity and specificity values of the tool are not ideal, we sought to evaluate the DELV-ST using data we collected from our screenings. Our study involved three analyses. These were:

- 1) Chi square analyses to evaluate the dialect ratings and risk for impairment scores on the DELV-ST as a function of school setting;
- 2) Correlation analyses to examine relationships between the children's item scores and their total scores on the DELV-ST;
- 3) Analyses of variance to evaluate the children's scores on the DELV-ST items as a function of their pass vs. fail classifications.

Participants

The participants were **121 four-year-olds** who attended private and public preschools and who participated in their school's screening program. Private preschools were fee-based and public preschools were Head Starts. The age of the participants did not differ between the schools; $F(1,119) = 1.06, p > .05$.

Table 1. Participants

School	% Male	Age	SD	Range
Head Start	64	53.51	3.64	48-59
Private	42	52.85	3.02	48-59

Methods

Children were administered the DELV-ST by graduate students in the Department of Communication Sciences and Disorders at Louisiana State University. Administration followed the published guidelines of the DELV-ST, and all students were either certified and licensed speech-language pathologists or supervised by certified and licensed speech-language pathologists or audiologists. **A fail on the DELV-ST was considered a score in the highest risk category.**

Results: Question 1

Variation from Mainstream American English (MAE) varied by type of preschool and rates of strong variation were particularly high in the public school setting (Head Start = 62% vs. Private = 21%). The difference between the schools' dialect ratings was statistically significant; $\chi^2 = 52.29, p < .001$.

Table 2. Degree of nonstandard dialect use

School	Strong Variation From MAE	Some Variation From MAE	Mainstream American English
Head Start	45	27	1
Private	10	10	28

Risk for language disorder also varied by type of preschool and fail rates were particularly high for the public school setting (Head Start = 44% vs. Private = 15%). The difference between the schools' fail rates was statistically significant; $\chi^2 = 11.35, p < .001$. Interestingly, though, **the correlation between the children's dialect ratings and risk for impairment, albeit statistically significant and negative, was relatively low; $r = -.27, p < .001$.** This finding indicates that the children's dialect ratings accounted for a small amount of the variance (.07) within the children's risk scores.

Table 3. Degree of risk for language disorder

School	Lowest	Low to Medium	Medium to High	Highest (FAIL)
Head Start	9	11	21	32
Private	19	12	10	7

Results: Question 2

The children's scores on the DELV-ST items were correlated to their DELV-ST total scores. The magnitude of the correlations ranged from moderate to high. These findings suggest that the children's performance on the DELV-ST was stable across the items.

Table 4. Item correlations with total score

Items	Total
<i>Was/Were</i>	$r = .84$
<i>Wh- Questions</i>	$r = .57$
Possessive Pronouns	$r = .61$
Nonword Repetition	$r = .73$

$p < .01$, all items

Results: Question 3

The children's scores on all items varied as a function of their pass/fail classifications, with effect sizes largest for items related to *was/were*. These findings are consistent with the correlation analyses because they show stability in the children's performance across items and as a function of their pass/fail classifications.

Table 5. Average items correct by pass/fail rate

	Pass	Fail	Significance	η^2
<i>Was/Were</i>	.65 (.32)	.12 (.21)	$F(1,119) = 88.78, p < .01$.43
<i>Wh- Questions</i>	.28 (.27)	.08 (.13)	$F(1,119) = 19.82, p < .01$.14
Possessive Pronouns	.83 (.30)	.40 (.38)	$F(1,119) = 44.02, p < .01$.27
Nonword Repetition	.77 (.21)	.53 (.31)	$F(1,119) = 23.69, p < .01$.17

Conclusions

Results show high rates of variation from MAE (62%) and high rates of failed screenings (44%) with the DELV-ST in the public as compared to the private preschools. Nevertheless, the children's dialect ratings played a small, albeit significant role, in the children's risk scores (variance accounted for = .07). In addition, the children's performance on the DELV-ST was stable across the items and all items led to reliable group differences between the children who passed and failed the tool. **These findings provide support for the DELV-ST but also call for additional study of the high fail rates that were documented in the public school setting. Until this work is done, additional screening mechanisms are recommended to augment the DELV-ST when it is given as part of a school-wide screening clinic.**

References

- Seymour, H.N., Roeper, T.W., & de Villiers, J. (2003a). *Diagnostic Evaluation of Language Variation-Screening Test*. San Antonio, TX: The Psychological Corporation.
- Seymour, H.N., Roeper, T.W., & de Villiers, J. (2003b). *Diagnostic Evaluation of Language Variation-Criterion Referenced*. San Antonio, TX: The Psychological Corporation.

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