Narrative Proficiency of Stories Produced by Typically Developing Students Ages 4-7

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Abstract

The purpose of this study was to measure narrative proficiency of 260 typically developing children ages 4 to 7 using a criterion referenced, progress monitoring tool. The study included 42, 4 year olds, 57, 5 year olds, 68, 6 year olds, and 93, 7 year olds. The participants were asked to retell a story with a model. The stories were transcribed using the Systematic Analysis of Language Transcripts (SALT). The Monitoring Indicators of Scholarly Language¹ (MISL) was used to score a script-like story produced by children. We found that as the age of the child increased, the MISL scores increased indicating that MISL was developmentally sensitive to change. We also observed that the MISL scores were correlated with the overall measure of narrative proficiency, but the relationship was small. This was likely due to the fact that the MISL is better suited for measuring fictional narratives rather than script-like stories. MISL is a valid, developmentally sensitive measure of narrative proficiency, but may not be the optimal way of measuring changes in script-like stories.

Keywords: Proficiency, Developing, Story

1. Introduction

Research has shown that development of narrative language has a strong link to children's success in the classroom². Standardized tests have commonly been used to measure narrative proficiency³. These tests are useful for determining whether children have language impairments, but they are not useful for progress monitoring. In the current study, a criterion referenced measure, was used to document the children's narrative proficiency. The tool we used is called Monitoring Indicators of Scholarly Language (MISL). The MISL has been used in other studies as a criterion referenced measure of narrative proficiency for children with language impairment⁴, children with Autism Spectrum Disorders⁵, and children at-risk for academic failure⁶. We were interested in determining whether this tool was a valid measure for evaluating the development of script-like stories across four age groups. This study extends the age ranges of populations that have been previously studied.

The research project posed the following questions.

- 1. Do scores on the MISL differ across the age ranges studied for a script-like story?
- 2. Do scores on the MISL correlate with measures of narrative proficiency?
- 3. What aspects of macrostructure and microstructure differ across the age groups?

2. Methodology

2.1 Participants

The study included 38, 4 year olds, 56, 5 year olds, 68, 6 year olds, and 73, 7 year olds. The participants were asked to retell a story after hearing it. The story was a subtest of the Test of Narrative Language (TNL-2). The stories were transcribed using the Systematic Analysis of Language Transcripts (SALT). The Monitoring Indicators of Scholarly Language⁷ was used to score script-like narratives produced by the participants.

2.2 Outcome Measures

Systematic Analysis of Language Transcripts (SALT) was used to transcribe the stories told by children, which were then coded for narrative quality using the MISL. MISL is a progress-monitoring tool that measures the macrostructure and microstructure of stories. Macrostructure focuses on the hierarchy of the story (character, setting, initiating event, internal response, plan, attempts, consequences), while microstructure focuses on the narrative's specific words and grammar (coordinating and subordinating conjunctions, adverbs, elaborated noun phrases, metalinguistic and metacognitive verbs). The participants are scored on a scale of 0 to 3 according to their level of mastery in each category, making the total overall score range from 0-39.

3. Results

Table 1 shows the means and standard deviations for the MISL scores, total raw scores on the oral narration (ON) and total narrative proficiency score (TNLAI) on the TNL-2 by age group.

AGE (years)	MISL	ON	TNLAI
4 (n=38)	5.82 (4.95)	17.58 (8.23)	79.95 (20.21)
5 (n=56)	6.39 (5.01)	17.75 (8.58)	92.88 (18.31)
6 (n=68)	10.68 (6.47)	21.25 (7.82)	96.96 (15.36)
7 (n=73)	14.18 (6.01)	23.85 (9.05)	106.08 (17.15)

Note. MISL (Monitoring Indicators of Scholarly Language), MACRO (Macrostructure), MICRO (Microstructure), TNLAI (Total Narrative Production Raw Score), PROD RAW SCORE (McDonalds Production Raw Score).

A one-way, multivariate analysis of variance (MANOVA) was conducted to determine the effect of age on the overall performance on MISL, the macro and microstructure scores on the MISL and the overall narrative production raw score on the Test of Narrative Language (TNLAI raw score). Significant differences were found among the age groups on the dependent measures, Wilks's $\Lambda = .592$, p <.001. The multivariate η^2 based on Wilks's Λ was strong, $\eta^2 = .143$. Analyses of variances (ANOVA) on the dependent variables were conducted as follow-up tests to the MANOVA. Using the Tukey method, each ANOVA was tested at the .05 level.

The ANOVA on the MISL total score was significant, F(3, 235) = 27.015, p = .001, $\eta^2 = .260$, as was the ANOVA on the Macro score F (3, 235) = 21.21, p = .001, $\eta^2 = .216$, the Micro score F (3, 235) = 27.46, p = .001, $\eta^2 = .263$, the TNLAI score, F(3, 235) = 19.45, p = .001, $\eta^2 = .202$ and the ANOVA for the oral narration (ON) subtest score, F(3, 220) = 42.89, p = .001, $\eta^2 = .369$.

Post hoc analyses to the univariate ANOVA for the scores revealed that there were significant differences for the total MISL score, the Macro score, and the Micro score for every age comparison except between four and five year olds. For the TNLAI score, all of the age comparisons were also significant except for the comparison between five and six year olds.

Correlation coefficients were computed among the MISL total score, the MISL Macro and Micro scores, and for the TNLAI scores with age collapsed. These correlations are illustrated in Table 2. The MISL, Macro and Micro scores were significantly correlated the TNLAI scores, but the relationship was small (.224, p = .001).

Table 2	Pearson	Product	Moment	Correlation	Coefficient	between t	he MISL	scores and	measures of	foral	narration
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	TOTAL	MACRO	MICRO	TNLAI	ON
TOTAL	1				
MACRO	.960**	1			
	0.001				
MICRO	.928**	.792**	1		
	0.001	0.001			
TNLAI	.224**	.176**	.260**	1	
	0.001	0.007	0.001		
ON	.187**	.160*	.194**	.833**	1
	0.004	0.014	0.003	0.001	

Note. MISL (Monitoring Indicators of Scholarly Language)

**p < 0.01 level, two-tailed. *p < 0.05 level, two-tailed

Follow up ANOVAs were conducted for the variables listed on the Macro and Micro subscales of the MISL to determine if significant differences existed for the age groups. There were significant differences for all of the variables on the Macro subscale except for internal response (IR). None of the children were likely to use IR in their retells. There were significant differences for all of the variables on the Micro subscale. For both subscales, as children increased in age, they earned higher scores for all of the variables measures. Tables 3 and 4 display the means and standard deviations for both subscales.

Table 3. Means and Standard Deviation	s for Macrostructure Subscales
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AGE	CHARACTER	SETTING	<u>IE</u>	<u>IR</u>	PLAN	ACTION	CONCLUSION
4 (n=38)	1 (1.01)	0.66 (.85)	0.92 (.85)	0.05 (.32)	0.13 (.058)	0.74 (.80)	0.18 (.46)
5 (n=56)	1.04 (.97)	0.79 (.93)	0.68 (.79)	0 (0)	0.2 (.52)	0.96 (.66)	0.41 (.73)
6 (n=68)	1.18 (.86)	1.28 (.96)	1.51 (.87)	0.09 (.41)	0.26 (.56)	1.28 (.81)	0.57 (.83)
7 (n=73)	1.9 (.87)	1.64 (.81)	1.6 (.94)	0.07 (.35)	0.42 (.62)	1.71 (.77)	1.03 (1.19)

Note. IE (Initiating Event), IR (Internal Response)

Table 4. Means and Standard Deviations for Microstructure Subscales

AGE	COORDINATING	SUBORDINATING	MENTAL	LINGUISTIC	ADVERB	ENP
	CONJUNCTION	CONJUNCTIONS				
4 (n=38)	0.61 (.82)	0.18 (.39)	0.29 (.61)	0.18 (.46)	0.03 (.16)	0.84 (.64)
5 (n=56)	0.66 (.51)	0.16 (.37)	0.21 (.56)	0.21 (.46)	0.3 (.60)	0.8 (.55)
6 (n=68)	1.38 (.93)	0.44 (.70)	0.63 (.77)	0.65 (.81)	0.09 (.38)	1.54 (2.30)
7 (n=73)	1.3 (.55)	0.52 (.67)	0.67 (.77)	0.84 (.88)	0.82 (.93)	1.64 (.70)

Note.

4. Conclusion

The MISL scores for children ages 4 to 7 were observed to increase over time. This demonstrated that the MISL was developmentally sensitive to change. Interestingly, students were not observed to use internal response across all ages. This may have been due to the fact that internal response was not modeled in the script-like story. The MISL scores were correlated with the overall measure of narrative proficiency but the relationship was small. The MISL is designed to characterize fictional narratives that contain an initiating event, attempts and a consequence. These story elements are related causally such that something motivates the character to take action. These kinds of stories are fundamentally different than a script-like story. Thus, while the MISL is a valid measure of narrative proficiency, it may not be the best way to characterize progress made in script-like stories.

5. Future Work

It may be useful to compare stories created from sequenced pictures and single scenes that more closely align with the structure of the MISL rubric. In this fashion we can better evaluate the usefulness of the MISLas a progress monitoring tool for narratives of different types.

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