Assessing and Exploring the Oral Proficiency of Young Mandarin Immersion Learners

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Study Purpose and Research Questions

Purpose. This study examines Mandarin Immersion (MI) students' second language (L2) oral proficiency outcomes in Mandarin

Research questions

1. How do median scores for oral fluency, grammar, vocabulary, and listening comprehension compare across kindergarten, Grade 2, and Grade 5?
2. To what extent do median oral proficiency scores differ between kindergarten and Grade 2, and Grades 2 and 5?
3. What changes occur in the linguistic complexity of Mandarin oral language produced by one kindergarten, one Grade 2, and one Grade 5 immersion learner during a proficiency assessment interview?

Study Design

Study Context and Participants. 277 Kindergarten, Grade 2 and Grade 5 students from three Mandarin immersion programs in two suburban districts.

TABLE 1. *Number of MI Students Assessed by School Year (Spring of 2010 – 2013)*

Grade	2010	2011	2012	2013	*N*
Kindergarten	31	34	34	/	99
Grade 2	35	35	31	36	137
Grade 5	/	/	/	41	41
Total *N*	66	69	65	77	277

Assessment Instruments. Two task-based, criterion-referenced oral proficiency assessments developed by the Center for Applied Linguistics (Thompson, Boyson, & Rhodes, 2006):

1. Student Oral Proficiency Assessment (SOPA), and
2. CAL Oral Proficiency Exam (COPE)

Data Collection. Each spring during 2010–2013, a stratified random sample of same-grade pairs were interviewed outside the classroom by a three-member assessment team consisting of an interviewer and two raters. Interviews were video- and audio-recorded. Ratings were assigned immediately following the interview for oral fluency, grammar, vocabulary, and listening comprehension using a rating scale based on ACTFL Proficiency Guidelines (ACTFL, 1999).

Data Analysis

1. A statistical comparative analysis of cross-sectional assessment data for 277 kindergarten, Grade 2, and Grade 5 students, and
2. A detailed linguistic complexity analysis comparing three MI students' speech samples (one per grade level) produced during the assessment interview.

Findings: Assessment Analysis

RQ1. How do median scores for oral fluency, grammar, vocabulary, and listening comprehension compare across kindergarten, Grade 2, and Grade 5?

TABLE 3. *Mann Whitney U Test Results for Between-Grade-Level Differences*

Grade Levels	Oral Fluency	Grammar	Vocabulary	List Comp
K–2	.001***	.001***	.001***	.001***
K–5 CAL	.001***	.001***	.001***	.001***
2–5 CAL	.402	.576	.327	.435

Note. $^{**}p < .01$. $^{***}p < .001$. List Comp = listening comprehension.

RQ2. To what extent do median oral proficiency scores differ between kindergarten and Grade 2, and Grades 2 and 5?

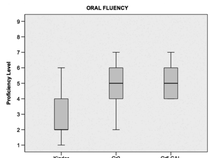

FIGURE 1. Tukey's Exploratory Data Analysis for Oral Fluency

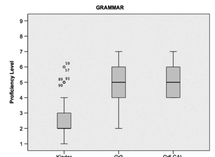

FIGURE 2. Tukey's Exploratory Data Analysis for Grammar

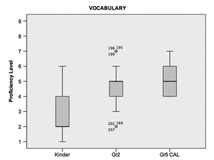

FIGURE 3. Tukey's Exploratory Data Analysis for Vocabulary

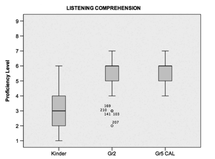

FIGURE 4. Tukey's Exploratory Data Analysis for Listening Comprehension

Findings: Linguistic Complexity Analysis

Student Selection

TABLE 4. *CAL Ratings by Proficiency Domain for Speech Samples of Three Student Representatives*

Participant	Oral Fluency	Grammar	Vocabulary	List Comp
Rose (K*)	2-JNM	2-JNM	2-JNM	2-JNM
Connor (2)	5-JIM	5-JIM	5-JIM	6-JIH
Dana (5)	5-JIM	6-JIH	5-JIM	6-JIH

Note. *K= kindergarten; 2 = Grade 2; 5 = Grade 5. List Comp = listening comprehension

Linguistic Complexity Measures

Grammatical complexity measures: (a) mean length of the AS-unit, (b) mean clause per AS-unit, (c) number of clauses per AS-unit, and (d) types and proportional use of modified noun phrases.

Lexical complexity measures: (a) lexical diversity using Guiraud index, (b) lexical sophistication by calculating the proportion of Tier 1 versus Tier 2 versus Tier 3 words.

RQ3. What changes occur in the linguistic complexity of Mandarin oral language produced by one kindergarten, one Grade 2, and one Grade 5 immersion learner during a proficiency assessment interview?

TABLE 7. *Grammatical Complexity (Sentential): Mean Clause per AS-Unit and Number of Clauses per AS-Unit*

	Sentential Complexity			Number of Clauses per AS-Unit						
Participants	*N* (AS-Units)	*N* (Clauses)	Mean	1	2	3	4	5	6	7
Rose (K)	50	27	0.5	21	1	0	1	0	0	0
Connor (2)	110	164	1.5	43	22	16	3	2	0	1
Dana (5)	54	138	2.6	16	14	8	5	6	1	2

Note. Mean is calculated by dividing the total number of clauses by total number of AS-units.

TABLE 9. *Phrasal Complexity: Types and Proportional Use of Modifiers in Noun Phrases*

Participant		Classifier/Measure Phrases	Associative Phrases	Modifying Phrases	
				Attributive	Relative Clause
Rose (K)	%	43	57	0	0
	n/N	(3 / 7)	(4 / 7)	(0 / 7)	(0/7)
Connor (2)	%	44	38	16	1
	n/N	(32 / 73)	(28 / 73)	(12 / 73)	(1 / 73)
Dana (5)	%	57	24	9	10
	n/N	(38 / 67)	(16 / 67)	(6 / 67)	(7 / 67)

Note. *N* = All instances of noun modifiers produced by the learner; *n* = the number for each type of modifier used. Because students sometimes used multiple modifiers for a given head noun, the *N* in this table does not equal the total modified noun count in Table 8.

TABLE 12. *Percentage of Unique Words by Tier Across Learners*

Participants		Tier 1	Tier 2	Tier 3
Rose (K)	%	92	7	2
	n/N	(55 / 60)	(4 / 60)	(1 / 60)
Connor (2)	%	78	17	5
	n/N	(168 / 216)	(37 / 216)	(11 / 216)
Dana (5)	%	85	11	4
	n/N	(140 / 164)	(18 / 164)	(6 / 164)

Note. Unique words are the number of different words produced in one speech sample.

Discussion and Implications

Discussion

- L2 oral proficiency outcomes of young MI students resemble trends for Spanish immersion students using the same tools at the same grades.
- MI students' proficiency ratings were consistently at least one sublevel lower than those of Spanish immersion students in all domains at all grades.
- Follow-up comparison of the percentage of ratings in the Jr. Advanced range by grade level and proficiency domain indicated that fewer advanced-level ratings were achieved in vocabulary in Grades 2 and 5 compared with oral fluency and grammar.
- In general, a wide range of complexity metrics confirmed a noticeable difference in the degree of grammatical and lexical complexity between oral language produced by Rose (kindergarten) and the other two students, Connor (Grade 2) and Dana (Grade 5).

Implications

- Paying close attention to ongoing, systematic development of word knowledge is essential for pushing MI learners towards advanced-level L2 oral proficiency. In Mandarin, this involves an explicit focus on character knowledge development and word-formation skills.
- To increase MI students' use of more complex, commonplace syntactic structures such as the prenominal relative clause, MI teachers need to target these structures as they develop their content-based lessons and units.
- Additional linguistic complexity studies that analyze MI students' oral language production at various intermediate proficiency levels are needed to further inform the development of new L2 proficiency assessments and improve existing rating scales and tools.

Conclusion

Results indicate significant differences in median scores between kindergarten and Grade 2 in all domains; however, no median score differences were found between Grades 2 and 5. An exploratory complexity analysis of three speech samples revealed increasingly higher levels of grammatical complexity across grades. Measures of lexical complexity for the Grade 5 sample, while higher than those in kindergarten, were lower than those of Grade 2. Study findings question the efficacy of existing proficiency assessments at capturing the multidimensionality of oral proficiency in the intermediate and pre-advanced range. They also highlight the important role finely grained complexity measures can play in informing curriculum, instruction, and assessment practices

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