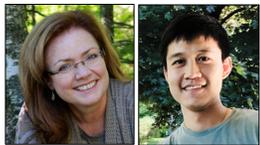


How Can Learner Language Inform Mandarin Immersion Teaching?



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Mandarin Immersion Students' Second Language (L2) Oral Proficiency

Since 2006, the number of Mandarin immersion (MI) programs has expanded rapidly. Recent studies on MI students' speaking performance, as measured by the Standards-Based Measurement of Proficiency for Students in Elementary (STAMP4Se), have shown that by Grade 5 the majority of students score at Intermediate Low levels whether they begin the program proficient in English or Mandarin (Burkhauser et al., 2016; Fortune & Song, 2016; Padilla, Fan, Xu & Silva, 2013). STAMP4Se benchmark levels (Avant Assessment, 2015) are generally aligned with the proficiency guidelines of the American Council on the Teaching of Foreign Languages.

As a complement to such global speaking scores, Fortune & Ju (2017) reported on a multi-year assessment project carried out with 277 MI students from three K-5 early total programs using oral proficiency assessments developed and validated by the Center for Applied Linguistics. Median scores for fifth graders were consistently one sublevel higher than STAMP4Se results: Jr. Intermediate Mid for oral fluency (OF), grammar (G), vocabulary (V), and Jr. Intermediate High in listening comprehension (LC). More importantly, statistically significant differences were found between median scores in OF, G, and V for Kindergarteners (Jr. Novice Mid) and second graders (Jr. Intermediate Mid) and between Kindergarteners and fifth graders (Jr. Intermediate Mid); however, no differences were found in any domain between students in Grade 2 and Grade 5.

Findings from these four studies are in line with earlier studies carried out in Canadian French and U.S. Spanish immersion contexts (e.g., Fortune & Tedick, 2015). Collectively, they draw further attention to the well-documented intermediate-range plateau effect in the oral proficiency development of language immersion students. How can we best understand the leveling off of proficiency scores? How might analyzing students' oral language inform immersion educators' efforts to push students beyond the plateau?

Exploring Mandarin Immersion Students' Oral Language

To further explore the L2 oral language produced by MI students, Fortune & Ju (2017) also compared three students' speech samples: Rose (Kindergarten), Connor (Grade 2), and Dana (Grade 5). Using a variety of established linguistic measures, we analyzed changes in complexity, accuracy and fluency (Housen, Kuiken, & Vedder, 2012). In this brief, we will summarize findings from our initial report of changes observed in complexity, defined as the size, elaborateness, and diversity of a learner's L2 system, and go on to present additional findings related to accuracy. We will end by highlighting a few preliminary implications for MI teachers and program leaders.

Grammatical complexity. Taken together, linguistic complexity measures revealed steadily increasing levels of grammatical complexity across all three students, with Dana's language sample showing descriptively more complex language as evidenced by longer speech units and greater use of embedded

clauses. Her speech also demonstrated more nativelike sensitivities to Mandarin, for example, in her more sophisticated approach to noun modification by placing a modifying relative clause before the noun being described. Here, Dana used the relative clause (我最喜欢的 [I most like DE]) to describe the noun 运动 (sport): 我最喜欢的运动是篮球 (My favorite sport is basketball) (Line 16).

Lexical complexity. Multiple measures revealed greater word variety and use of less commonly used words in Connor's and Dana's language production relative to Rose. However, Connor consistently outperformed Dana on measures of lexical complexity. As an example, his speech sample evidenced more diversity in his use of nouns, e.g., 毛 (fur), 箱 (container), 根 (root), 茎 (stem) and adjectives, e.g., 香 (tasty), 咖啡色的 (coffee colored).

Accuracy. Accuracy, or correctness, refers to the degree to which an L2 learner's performance and the L2 system that underlies this performance differs from a native-speaker norm (Housen, Kuiken, & Vedder, 2012). We first identified error-free speech units. Next, we made note of two distinct types of error, i.e., grammatical and lexical errors. We then calculated the proportion of completely error-free units relative to the total number of speech units produced by the learner, followed by an analysis of the proportion of units that were either grammatically or lexically error-free.

Global measures. Table 1 shows a steady decrease in the proportion of completely error-free units as students progressed through the grades: 82% (Rose), 59% (Connor), and 45% (Dana). We observed that the high percentages of grammatically and lexically error-free units (94%) in Rose's speech sample were largely due to her language consisting of 1-2 words or short formulaic phrases, such as 绿色 (green), 出去玩 (to play outside). In contrast, Dana produced much longer strings of spontaneous language with over 40% of her speech units including between 3-7 clauses; at the same time, less than half of these units were error-free.

Table 1. Global Measures: Types and Proportion of Error-Free Speech Units

Participants	All Error-Free n/N (%)	Grammatical n/N (%)	Lexical n/N (%)
Rose (K)	41/50 (82)	47/50 (94)	47/50 (94)
Connor (Gr. 2)	65/110 (59)	85/110 (77)	85/110 (77)
Dana (Gr. 5)	25/54 (45)	39/54 (72)	36/54 (67)

Note. N = the total number of speech units produced by each learner.

One additional finding appears noteworthy. L2 linguists have argued the need to distinguish accuracy (e.g., as shown by number of errors) from comprehensibility (e.g. as shown by errors causing comprehension problems). Because immersion students' oral language is often described as "comprehensible in context" albeit not error-free, each speech unit was rated for comprehensibility assuming a sympathetic native-speaker listener. MI students' speech units determined to be "comprehensible in context" appeared to substantiate this



anecdotal observation: 100% for Rose, 94% for Connor, and 96% for Dana.

Specific measures. We also selected two frequently-occurring target forms to examine as specific indices of students' linguistic accuracy: 1) three connectors with related meanings [和 (*and*), 然后 (*and then*), and 而且 (*and*)], and 2) the null element.

Accurate use of the three connectors is somewhat nuanced and thus easy for L2 learners to misuse. The conjunction, 和 (*and*), for example, can only be used to connect two noun phrases (e.g., 妈妈和弟弟 [Mom and brother] [Rose, Line 244]). To link verb phrases and clauses, Mandarin speakers use 而且 (*and*) (e.g., 小宝宝说 :: 有人睡我的床 :: 而且还在睡 [the little child said :: there was someone sleeping on my bed :: and she is still sleeping] [Connor, Line 313]). To temporally sequence sentences, they will use 然后 (*and then*) (e.g., “我还要睡觉”// 然后它去睡觉 // [“I still wanted to sleep” // and then it went to sleep //] [Connor, Lines 66-67]). We calculated the proportion of correct uses relative to the total number of uses for each of the three linking words by learner (see Table 2).

Table 2. Correct/Total Instances of Three Connectors: 和, 然后, and 而且

Participants	和 (and)	然后 (and then)	而且 (and)
	Correct/Total	Correct/Total	Correct/Total
Rose (K)	3/4	0/0	0/0
Connor (Gr. 2)	11/13	6/6	2/2
Dana (Gr. 5)	9/35	1/1	0/0

Our data indicated that all learners produced 和 (*and*) with greatest frequency. Further, as use of this linking element increased with grade level, the proportion of correct uses decreased strikingly from 75% for Rose to 26% for Dana. Most of Dana's inaccurate uses of 和 (*and*) were due to her using it at the beginning of a sentence in a manner similar to use of the filler “and” in English. Connor made some use of all three connectors and did so with a relatively high degree of accuracy. Still, overall these data suggest that MI learners tend to underuse 然后 (*and then*) and especially 而且 (*and*) to link phrases, clauses and sentences. Indeed, most (71%) of Dana's and both cases of Connor's incorrect uses of 和 (*and*) were appropriate contexts for either 然后 (*and then*) or 而且 (*and*).

We also looked carefully at students' use of the null element, a salient feature of topic prominence in language. As a topic-prominent language Mandarin often states the topic (i.e., the thing that is being talked about) first; this contrasts with subject-prominent English which puts the subject (i.e., action doer) first. Null element refers to the obligatory omission of a subject or object in a sentence because it was previously identified as the topic and thus superfluous. We found a decrease in correct use of null element (82% for Rose; 67% for Connor; 56% for Dana), most notably in subject position and an increase in subject pronoun overuse (0% for Rose; 30% for Connor; 33% for Dana). For example, in this speech unit Dana overused the subject pronoun 我 (*I*) three times: *和{um} *我有一次 :: *我在看一个篮球比赛 :: *我看在我的椅子{里}下面 :: 我找到{十一- um- } 十一美元 (*also {um} *I have one time:: *I was watching a basketball game :: *I saw {in} under my chair :: I found {eleven- um- } eleven dollars) (Dana, Line 74). Dana's speech sample showed both over-suppliance (33%) and under-suppliance of subjects (11%) indicating a general lack of clarity about how to accurately use null element in subject position.

Action Implications for MI Education

Outcome-oriented research carried out in Canadian and U.S. immersion contexts has consistently found that English home language students' L2 oral language lacks grammatical accuracy, lexical specificity, native pronunciation, and is less complex and sociolinguistically appropriate when compared with the language

native speakers of the L2 produce. Data from this study suggest that these findings may also apply to MI settings. While we clearly need more studies of this nature, what lessons can we propose for MI programs and educators at this time?

1. **Complementary types of linguistic measurement to better inform instruction.** Standardized language proficiency assessments will benefit from the use of complementary assessment tools and more detailed linguistic analyses that can offer more particular information about aspects of immersion learner language that can be used to inform curriculum and instruction.
2. **Ongoing, intentional focus on lexical development to push L2 proficiency.** A systematic and explicit approach to vocabulary growth and the development of word knowledge clearly is a critical component of high-quality language immersion program implementation. Without continued growth in lexical skills, it will likely be difficult to push students' proficiency beyond the upper intermediate levels.
3. **Forms to target with the Contextualization-Awareness-Practice-Autonomous (CAPA) instructional sequence (Lyster, 2018).** CAPA is a research-supported approach to targeting specific linguistic forms within the context of subject-based teaching contexts such as language immersion. However, because some forms can be acquired more incidentally and classroom time is limited, teachers need guidance in identifying forms that merit instructional focus. Findings from this study suggest the following structures for Mandarin: pre-nominal noun modification using the relative clause, appropriate use of three connectors with related meanings (和 [*and*], 然后 [*and then*], and 而且 [*and*]), and use of the null element especially in subject position where it occurs more frequently and its use tends to be over-generalized.
4. **Corrective feedback strategies to increase native-like oral production (Lyster, 2018).** Increasingly inaccurate use of the conjunction 和 (*and*) as a English-like filler marked Dana's speech. This suggests a need for teachers to hold sufficiently high standards for students' oral language production especially in the upper-elementary grades. Regularly accepting students' ability to be “comprehensible in context” is not enough. Employing a range of corrective feedback strategies to encourage students to notice and self-repair their language seems warranted.

This study highlights the potential contribution of analyzing immersion learner language as a means of better understanding how to move upper-elementary students beyond the language plateau. As we continue to witness the proliferation of immersion initiatives across the U.S., especially in Mandarin, classroom-based and applied research that informs practice will become increasingly critical to the continuous improvement of language outcomes and realization of far-reaching immersion program goals.

Selected References

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