Functional adequacy distinguishes immigrant multilinguals in French speaking task

Callie Mady,
(Nipissing University)

Alexandra Seiling,
(Nipissing University)

ABSTRACT:*This study used measures of learned linguistic knowledge, linguistic competence, and functional adequacy to compare the oral French performance of three groups of Grade 6 French as a second language students : Canadian-born Anglophone, Canadian-born multilingual and Immigrant multilingual. The findings revealed functional adequacy as a discriminating factor in which the Immigrant multilingual group outperformed the other two groups. There were no other statistically significant differences found.*

I.   INTRODUCTION

There are numerous models of second language competence (e.g., Bachman& Palmer, 1996 [1]; Canale& Swain, 1980 [2]; Mitchell & Miles, 2004 [3]) that have been applied to second language research in general and to oral proficiency more specifically. This variety of models offers choices to researchers that guide their data collection and analysis. Chomsky (1965 [4]), for example, favoured examining the structure of language; Hymes (1967 [5]) privileged communicative competence. In addition to models influencing second language research, some models have also influenced second language pedagogy (e.g., Celce-Murcia, Dörnyei, &Thurrell, 1995 [6]; Moirand, 1982 [7]) leading to an acknowledgement of the need to enhance both communicative competence and the structures required to produce such communication. For this present study, we adopted the model of Towell and Hawkins (1994 [8]) so as to explore both the act of communicating meaning and the processes required to do so. In particular, the Towell&Hawkins' (1994) model recommends the examination of three areas: linguistic competence, learned linguistic knowledge, and the act of communicating a message as these three components are required for speakers to successfully communicate in their second language. Towell(2012 [9]) refers to linguistic competence as the use of syntax, learned linguistic knowledge, for the most part, as grammatical and lexical knowledge, and communication of a message as the act of delivering an oral message in real time. In this study, a syntactic complexity measurement was used to explore linguistic competence, grammatical accuracy and lexical richness, including a measurement for the use of English, datato represent learned linguistic knowledge anda score of functional adequacy (i.e., the degree to which a learner's performance meets the tasks goals, Pallotti, 2009 [10]: 596)was the means used to determine the level of success in communicating a message. These scores were then compared among three groups of Grade 6 core French as a second language (FSL)[1] students in Canada: a) Anglophone Canadian-born students, b) multilingual Canadian-born students, and c) immigrant multilingual students.

1.1 Context of the study

Canada is often referred to as a country of immigrants, currentlyaccepting over 200, 000 newcomers annually (Statistics Canada, 2016a [11]). In the past, the majority of immigrants came from European countries that often shared a language script and/or family with French or English, Canada's official languages. More recently, over 40 per cent of immigrants to Canada come from Asia. Ontario, the province for this study, is the province that receives the most immigrants to Canada (73%) (The Canadian Immigration Magazine, 2016a [12]). At present, India is the primary source country for immigration to Ontario (The Canadian Immigration Magazine, 2016b [13]). More specifically, within the urban area where data were collected for this study, the majority of immigrants come from India, with 24 per cent of the city's population using an Indo-Iranian language at home (Statistics Canada, 2016b [14]). The education system in Ontario, both mainstream English and FSL, is working to meet the needs of this clientele (Ontario Ministry of Education, 2008 [15]).

1.2 Research Context

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[1] Core French is the study of the French language as a subject.

Addressing the needs of immigrant students within FSLclasses is an area of recent exploration. FSL is an obligatory subject of study in Ontario, Canada. Although there are more intensive options to study French in this context, the vast majority of students (78%) (Canadian Parents for French, 2017 [16]),study French within the core FSL program in order to meet the provincial requirements for FSL study. Despite FSL being a compulsory subject of study, two decades of research in Ontario has documented a practice of excluding immigrants from FSL study at times (e.g. Mady 2007 [17]; 2016 [18];Mady& Turnbull, 2010 [19]; Taaffe, Maguire, & Pringle, 1996 [20]). It was such exclusionary practices that led to additional research exploring whether immigrants to Ontario experience sufficient difficulty in FSL that would support considering exemptions. However, all of the research to date that compares the FSL achievement of immigrants to Canadian-born groups (e.g., Mady, 2013b [21]; 2017 [22]) reveals that the immigrant group outperforms the other groups where there are statistical differences; documentation of a Canadian-born group outperforming the immigrant group has yet to be revealed. Such Canadian research is supported by international research that found bilinguals to outperform monolinguals when examining general language proficiency (see Cenoz, 2003 [23] for a review).

Cenoz (2003) distinguishes between studies that explore general language proficiency and those that investigate a specific language skill and purports that where general language proficiency measures favour bilinguals; skill-focused studies report mixed results. The larger study from which this study was extracted compared the general French proficiency of the same groups: Canadian-born Anglophones, Canadian-born multilinguals and immigrant multilinguals. The former study revealed the immigrant multilingual group to outperform the two Canadian-born groups (Mady, 2013a [24],b; 2014 [25]) in measures of general French proficiency. In recognition of Cenoz's distinction between general and specific proficiency measures, this current study shares a subsequent analysis of the larger study examining the three groups' oral test results in greater detail. To our knowledge there is only one Canadian study that explored a specific aspect of a second language (i.e., writing) in a comparison of bilingual and monolingual groups. Knouzi and Mady (2017) compared the FSL writing of three groups of Grade 6 immersion students: Canadian-born Anglophones, Canadian-born multilinguals, and immigrant multilinguals. Their comparison revealed that, where there were statistical differences, the immigrant group had a richer lexicon and more accurate grammar.

1.3 Measuring second language oral production

Historically, the examination of second language oral production has most often been explored through quantifiable measures of complexity, accuracy, and fluency (Housen, Kuiken, &Vedder, 2012 [26]). This study's foundation in the Towell and Hawkins (1994) model also allows for measures that correspond to complexity and accuracy although categorized differently. The measurement of learned linguistic competence as identified by Towell and Hawkins corresponds to complexity as defined as the use of a range of structures and vocabulary and accuracy as included in the measurement of error-free production. More specifically, we examined lexical richness and grammatical accuracy under the category of learned linguistic knowledge. This study, however, deviates from traditional measurements of oral fluency (e.g., rapidity, pausing, hesitation) to examine functional adequacy. We made the choice to measure functional adequacy instead of fluency for the following reasons. First, we examined functional adequacy with the recognition that complex, accurate, and fluent speech does not necessarily result in successful communication of a message and it is therefore important to consider functional adequacy (De Jong, Steinel, Florijin, Schoonen, & Hulstijn, 2012 [27]). Second, in Ontario, Canada the context of this study, the FSL curriculum (Ontario Ministry of Education, 2013 [28]) as well as the corresponding functional approach in the Common European Framework of Reference (Council of Europe, 2001 [29]) encourage authentic language use and therefore measuring whether the learner succeeds at the task responds to this pedagogical focus. Thetripartite model and corresponding measurements of complexity, accuracy and functional adequacy thereby encompass both competence and performance.

II. METHOD

2.1Participants

One hundred and sixty-five Grade 6 core French students participated in the larger study from which this data was extracted (Mady, 2013a,b; 2014), a sub-group of 131 completed the speaking portion of the Diplômed'étudesen langue française (DELF, A1, primaire) (Centre International d'ÉtudesPédagogiques, 2012 [30]). From this larger study, the speaking tests of equal groups of 21 were selected to be included in this current study. All of the multilingual immigrant students' speaking tests and a random selection of 21 Canadian-born Anglophone and multilingual speaking tests were used in the below-described analysis. All the tests were recorded, evaluated for functional adequacy, transcribed and coded for the remaining analyses. Inter-rater reliability scores for the evaluation of the speaking portion of the test (i.e., functional adequacy) were

determined acceptable with a range from 0.81 to 0.89. Further, inter-rater reliability scores were calculated for the coding of the transcriptions. The range of 0.79 to 1.0 was determined to be within an acceptable range (Salkind, 2010 [31]).

This study used objective measures of learned linguistic knowledge (i.e., English use, lexical richness, and grammatical accuracy), linguistic competence (i.e., syntactic complexity) and measures offunctional adequacy to compare the linguistic and oral task performance of three groups of FSL learners: Grade 6 core French (a) Canadian-born Anglophones, (b) Canadian-born multilinguals, and (c) immigrant multilinguals.

2.2 Data analysis

In order to compare the three groups' oral French production, measures of English use, lexical richness, grammatical accuracy (i.e., learned linguistic knowledge), syntactic complexity (i.e., linguistic competence), and functional adequacy were determined and explored. In recognition that internal linguistic factors may influence certain linguistic variables (Housen, Kuiken, &Vedder, 2012 [32]). In the case of this study in particular, participants' language knowledge may contribute to their oral achievement. For example, a multilingual participant may have additional linguistic resources upon which to draw. It is in part due to the recognition of such influences that this study examines English use. We turned to the work of Ringbom (1987 [33]) to identify and classify the students' use of English. Ringbom classified such cross-linguistic influence on a continuum that ranges from borrowing which is viewed as inadequate control of the target language to the use of cognates.In order to measure lexical richness, we used VocabProfile (Heatley, Nation, & Coxhead, 2002 [34]) to determine the number of words and the number word types (i.e., number of different words). We then divided the number of types by the number of words to get a lexical richness score. For the measures of syntactic complexity and grammatical accuracy, we divided the transcribed texts into French t-units, French clauses, error-free French t-units, and French error-free clauses (Hunt, 1965 [35]). Given the low proficiency of the participants, ratios were determined sufficient to examine syntactic complexity and grammatical accuracy(Norris & Ortega, 2009 [36]; Wolfe-Quintero et al. 1998 [37]). Grammatical accuracy was determined by dividing the number of error-free t-units by the number of t-units. Syntactic complexity (i.e., linguistic competence) was calculated by dividing the number of clauses by the number of t-units. Although such measurements were first used to explore written performance, they are often used to assess oral performance (Levkina&Gilabert, 2012; Michel, 2011 [38]). Lastly, given the heightened focus on functional language use as reflected in the French as a second language curriculum for Ontario schools (Ontario Ministry of Education, 2013) and in the Diplômed'étudesen langue française (DELF) test used in this study, functional adequacy was considered a variable in speaking proficiency. Such a focus is supported by research (e.g., Anderson, 1995 [39]; Levkina&Gilabert, 2012; Robinson, 2005 [40]; Skehan, 2009 [41]) showing that language learners emphasize meaning over form thereby supporting the inclusion of a focus on functional adequacy. In particular, DELF trained raters scored the interactive speaking portion of the test on a nine-point scale evaluating participants' ability to fulfill the interactive goal to exchange information by answering and asking questions.

III. FINDINGS

3.1 Learned Linguistic Knowledge

Tables 1, 2, and 3 present the data categorized under learned linguistic knowledge (i.e., English use, lexical richness and grammatical accuracy). Table 1 shows the average text length and the median number of instances of the participants' use of English according to Ringbom(1987) taxonomy. It shows that the Canadian-born multilingual group produced shorter texts than the other two groups. In terms of English use, for the borrowing category, the medians were similar in Canadian-born Anglophone and immigrant multilingual groups, and lower in the Canadian-born multilingual group. It is noteworthy that no cognates and hybrids/blends/relexification were observed in any of the three groups. The one-way ANOVA showed no significant differences in the average number of instances of borrowing across the three groups, $F(2,60) = 0.84$, $p=0.436$, *partial* $\eta^2=.03$. Similarly, no significant differences were found for the average text length, $F(2,60) = 2.48$, $p=.0.092$, *partial* $\eta^2=.08$.

Table 1

Number of instances of English language use

	Borrowing	Cognates	Hybrids Blends Relexification	Average text length
Canadian-born Anglophone	14	0	0	91
Canadian-born multilingual	8	0	0	84
Immigrant multilingual	13	0	0	107

3.1.1 Lexical richness

The indicator of lexical richness was computed as a ratio of different words to the total number of words. The descriptive statistics and the results of pairwise comparisons for the lexical richness are presented in Table 2. The ANOVA results were non-significant, $F(2,60) = 2.76$, $p=0.071$, *partial* $\eta^2=.08$, indicating that on average lexical richness in the three groups is similar.

Table 2

Descriptive statistics and post-hoc tests for lexical richness by group

Measure	Group	*M*	*SD*	*95% confidence interval*	
				CBM	IM
Lexical richness	Canadian-born Anglophone	0.63	0.11	-0.14; 0.00	-0.07; 0.05
	Canadian-born multilingual	0.70	0.12		0.00; 0.13
	Immigrant multilingual	0.64	0.09		

*p<.05;

Table 3 shows that the mean for grammatical accuracy was similar across the three groups and not statistically significant, $F(2,58) = 1.97$, $p=.148$, *partial* $\eta^2=.06$.

Table 3

Descriptive statistics and post-hoc tests for grammatical accuracy measures by group

Measure	Group	*M*	*SD*	*95% confidence interval*	
				CBU	CBM
Grammatical accuracy	CBU	0.53	0.35		
	CBM	0.38	0.34	-0.36; 0.06	
	IBM	0.36	0.20	-0.34; 0.01	-0.17; 0.15

3.1.2 Linguistic Competence

We used the measurement of syntactic complexity to represent linguistic competence. As Table 4 indicates, the mean for syntactic complexity was similar across groups and the difference not statistically significant, $F(2,58) = 0.52$, $p=.598$, *partial* $\eta^2=.02$.

Table 4

Descriptive statistics and post-hoc tests for syntactic complexity measures by group

Measure	Group	*M*	*SD*	*95% confidence interval*	
				CBU	CBM
Syntactic complexity	CBU	1.15	0.45		
	CBM	1.08	0.17	-0.29; 0.10	
	IBM	1.17	0.18	-0.21; 0.19	-0.02; 0.20

*p<.05

3.1.3 Functional Adequacy

The tests were scored for functional adequacy with raters using a 9 point scale. Table 5 presents the functional adequacy scores indicating that the Canadian-born multilingual group had the lowest means and the immigrant multilingual group the highest. The one-way ANOVA showed significant differences were found for the functional adequacy scores (Table 6), $F(2,60) = 5.11$, $p=.009$, *partial* $\eta^2=.15$ with post-hoc comparisons indicating that the immigrant multilingual group had a significantly higher rate of the functional adequacy scores than ($MD=1.62$) than the CBU group, and than CBM group ($MD=2.24$).

Table 5

Functional adequacy scores

	Functional adequacy
Canadian-born Anglophone	6
Canadian-born multilingual	5
Immigrant multilingual	8

Table 6

Descriptive statistics and post-hoc tests for functional adequacy by group

Measure	Group	*M*	*SD*	*95% confidence interval*	
				CBA	CBM
Functional Adequacy	Canadian-born Anglophone	5.74	2.51		
	Canadian-born multilingual	5.12	2.13	-2.11; 0.79	
	Immigrant multilingual	7.36	2.37	0.13; 3.04*	0.83; 3.54*

*$p<.05$

IV. DISCUSSION

The above results revealed no statistically significant differences among the three groups on learned linguistic knowledge as measured by English use, lexical richness, and grammatical accuracy, nor any differences in linguistic competence as measured by syntactic complexity. The only measurement that showed a statistical difference was that of functional adequacy where the immigrant multilingual group outperformed the two Canadian-born groups. Given that the participants are considered beginner language learners, their low proficiency may be a factor in these findings where past research has found that more cognitively demanding tasks show a focus on form over message (De Jong, Steinel, Florijin, Schoonen, &Hulstijn, 2012). Although Cenoz (2003) indicates that bilinguals are often advantaged in general proficiency tests with mixed results in skill-specific tests, these results accompanied by the larger study results indicate that where there are statistical differences, the immigrant multilingual group outperforms.

Given the small sample size, these results should be considered with other research findings. When considering other Canadian research with similar participant groups, these results corroborate findings that indicate that immigrant multilingual students are advantaged in learning FSL in Canada. This study, in particular, with its specific focus on speaking highlights the heightened ability of the immigrant multilingual group to communicate a message in real time. We encourage practitioners to consider the variety of studies when in a position to influence immigrant students' educational trajectory and suggest that learning an additional language may present a context where they could perform at least on par with their Canadian-born peers.

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