ASSESSMENT OF LANGUAGE PROFICIENCY IN BILINGUALS: RELEVANCE FOR BILINGUAL EDUCATION

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Abstract

Consequent to globalization, proficiency in language has become an integral part in the domain of education. With the prevailing bilingualism in the educational set-up, there is a need to explore if we are geared to meet the challenges of bilingual education. Two studies were conducted in this direction. The first study focused on development of language proficiency assessment tool for Kannada-English bilinguals with primed Lexical Decision Task (LDT) paradigm (online task) validated with self rating questionnaire, LEAP-Q (offline task). The reaction time obtained on LDT was compared with the scores on LEAP-Q. The results indicated positive correlation between translation equivalent pairs of LDT and LEAP-Q suggesting that primed LDT could serve as a test for bilingual proficiency. In the second study, fifteen teachers who are non-native speakers of Kannada and English were tested for language proficiency using the online task. The results indicated that the teachers, although residing in Kannada speaking areas for long years, were less proficient in Kannada (mother tongue of children) compared to English (the medium of instruction). The outcome of the study has implications for educational policy makers and teacher educators in countries where bilingualism and multilingualism in education has been a challenge.

Keywords: *Bilingual education, Proficiency assessment, Lexical decision task*

Bilingualism refers to knowledge and use of two languages and an ability to make a meaningful utterance in another language (Harding and Riley, 1986). It is a sociolinguistic phenomenon that has received much scholarly attention. Bilinguals may have varying degrees of proficiency over their two languages. Hence, assessment of language proficiency is a complex task that continues to stir much debate among language researchers, test developers as well as educators. Major differences of opinion concern the exact nature of bilingualism, language proficiency and how best to do its assessment. MacNamara (1967) grouped the kinds of tests used to measure bilingual ability into rating scales, fluency tests, flexibility tests and dominance tests. Rating scales and Questionnaires are the commonly used tools in the assessment of language proficiency and they are subjective in nature, prone to bias as the subject himself/herself rates his/her proficiency. Besides these, administration of such tests is generally time-intensive for both the examiner and the examinee. To overcome this limitation, online tools have been used in the recent years.

Among the online tasks, primed lexical decision tasks and lexical naming tasks (Meyer and Schvaneveldt, 1971) have been frequently used to study bilingual lexical organization. There are very few studies documented in the Indian context investigating priming effects as an indicator of language proficiency. Bilingualism in India is different from that prevalent in other countries. The heterogeneity in India suggests that the language framework cannot be defined by fixed categories given by a few bilingual theorists (Pattanayak, 2011). The International Meet held with the National Multilingual Education Resource Consortium (NMRC) and many other organizations in September, 2011 in Mysore discussed issues of Mother tongue based Multilingual Education (MLE) policy adopted by many states in India. One of the major issues was 'capacity building' for a large number of MLE teachers since the number of teachers available from within a given language community is disproportionate to the number of children.

While majority of discussion by theorists and educational policy makers focus on bi/multilingual status of children, very few have explored its significance in bi/multilingual teachers imparting education to children who are 'native speakers' of 'non-native language' of teachers. Therefore, a need for development of an online tool for the assessment of language proficiency in teachers was strongly felt and was designed in two phases as Study 1 and Study 2 as detailed below.

Study No. I: Development of online test for language proficiency: The study was undertaken with the aim of developing a computer based test for quick, online assessment of language proficiency in Kannada-English bilinguals that serves a wide range of purposes for professionals such as speech language pathologists, researchers, educational administrators involved in assessing the proficiency of languages in teachers, diplomat from different countries or the second language learners.

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Method

Thirty adults in the age range of 18-30 years, with Kannada as their native language L1 that is acquired first and English as their L2 that is acquired later, with a minimum educational qualification of 10 years in L2 served as participants for the study. All the participants self rated their language proficiency on LEAP-Q (Language Experience and Proficiency questionnaire, Ramya & Goswami, 2009) as well as performed on a Lexical Decision Task (LDT). Informed consent was obtained from all the participants and ethical guidelines stipulated by the organization are followed for the conduct of the study.

Procedure: A total number of stimuli used for the LDT were six hundred target items and ten trial items. Out of six hundred items, three hundred each were selected from Kannada and English language. Three different types of primes were prepared for selected target words- semantically related primes, translation equivalents primes and semantically unrelated primes. The sets were formed based on the relation of prime with that of target word, the three sets being semantically related (SR), translation equivalents (TE) and semantically unrelated (SUR) conditions. For each language 99 non words were selected in order to achieve word to non word ratio of 0.3. The stimulus presentation for the lexical decision and the response recording were controlled using DMDX, a computer based software. Mean reaction time was computed in each of the prime categories. The mean reaction time measures were compared and correlated with proficiency levels on LEAP –Q.

Results

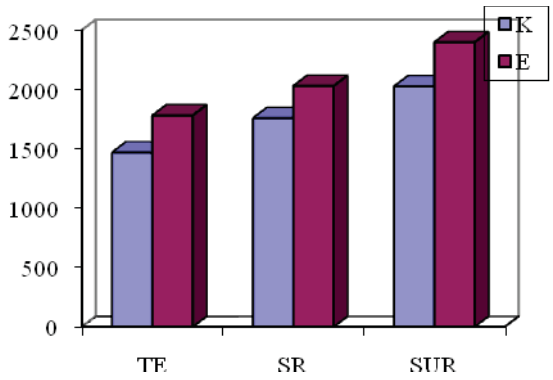
The performance of participants in the LDT was compared for Kannada and English languages. The mean and standard deviation values of R.T. for the three types of stimuli (translation equivalents, semantically related and semantically unrelated) between the two languages of the bilinguals (Kannada and English) are shown in Table 1 and Figure 1. Results revealed that the performance was better in Kannada (L1) in comparison to English (L2). Short R.T. was observed on TE stimuli compared to the other two prime types (SR and SUR) in both L1-L2 and L2-L1 conditions.

As shown in Table 1 and Figure 1, for translation equivalent stimuli type in Kannada, the mean and standard deviation values were 1468.36 milliseconds and 405.97 milliseconds and the mean and standard deviation for translation equivalent stimuli type in English were 1780.45 milliseconds and 508.99 milliseconds respectively. Paired samples T- test to test for statistical differences in the R.T. between Translation Equivalent (TE) stimuli types in Kannada and English language indicated significant difference ($p<0.$ 0.004).

Table 1: Mean R.T. and SD values of LDT for Kannada and English languages

Type of stimuli	Mean scores (Range: 200-4000ms)	N	SD
KMTE	1468.36	30	405.97
EMTE	1780.45	30	508.99
KMSR	1757.95	30	361.50
EMSR	2028.67	30	439.61
KMSU	2024.51	30	454.54
EMSU	2396.40	30	356.51

KM-Kannada mean; EM- English mean; TE-Translation Equivalent; SR-Semantically Related; SUR-Semantically Unrelated



(K-Kannada; E English; TE-Translation Equivalent; SR-Semantically related; SUR-Semantically unrelated)

Figure 1: Mean R.T. for Kannada and English languages

Comparison of LDT scores for TE with the four domains of LEAP-Q (speaking, understanding, reading and writing) also indicated positive correlation offering support to our premise that LDT can serve as a test for bilingual proficiency. The results showed relatively better correlation between Understanding and Speaking domain in comparison to Reading and Writing domains. The significant negative correlation of TE with Understanding and Reading domains (Table 2) indicates that with the increase in the R.T. for the LDT, there was a decrease in the self ratings for these two domains.

The results suggest that the online test developed for language proficiency assessment could be

employed to determine proficiency in bilinguals. Alternatively, it may be said that the primed LDT can be used as an objective tool for assessing proficiency in performance as against proficiency in competence determined through self rating questionnaires (Prema, 2011).

Table 2: Correlation coefficients for TE stimuli (Kannada) language with LEAP-Q

TE	K U	KS	KR	KW
Correlation coefficient	-0.97	-0.89	-0.48	-0.16
Significance level	0.001	0.00	0.009	0.043
N	30	30	30	30

TE- Translation Equivalent stimuli; KU- Kannada Understanding; KS- Kannada Speaking; KR- Kannada Reading; KW- Kannada Writing

Study No. II: Assessment of language proficiency in school teachers: The objective of the Study 2 was to examine the language proficiency in teachers employed in schools of Mysore city.

Participants: A purposive sample of 15 primary school teachers who are not native speakers of Kannada or English but reside in the state of Karnataka (with regional language being Kannada) and serve as teachers in the schools of Mysore city, India were selected. One of the criteria adapted for selection was that the teachers should not be a native speaker of Kannada or English language, the languages that are offered as medium of instruction in schools of Mysore city. Informed consent was obtained from all the participants and ethical guidelines stipulated by the organization are followed for the conduct of the study.

Procedure: Encouraged by the results of the study 1, the online test for language proficiency was administered on the 15 teachers. The results of language proficiency assessment on teachers were analyzed using SPSS (version 17) to examine if there is a difference in their language proficiency when compared to those participants selected in Study No.1 i.e., bilingual participants who are native speakers of Kannada (L1) and second language learners of English (L2).

Results: The R.T. to perform on LDT for Kannada and English in both Study 1 and study 2 was compared. Mixed ANOVA was carried out and the results are as shown in Table 3 and Table 4.

Table 3: R.T. on Kannada-English LDT

	Study	Mean	Std. Deviation	N
English	1.00	1780.46	508.99	30
	2.00	980.52	217.26	15
	Total	1513.81	575.50	45
Kannada	1.00	1468.36	405.97	30
	2.00	1100.91	400.72	15
	Total	1345.88	436.36	45

Table 4: Tests of Within-Subjects Effects

Source	df	F	Sig.
language	1	2.05	.159
language * study	1	10.43	**.002**
Error (language)	43		

P.S.: Sphericity Assumed

Table 4 shows that there is no statistically significant difference in the RT between the two languages in both Study 1 and Study 2 ($p<0.159$). However, interaction effect was observed between langauges and Study I and II ($p< 0.002$). R.T. for the two langauges was compared between Study 1 and Study 2 and found to be significant ($p< 0.000$). Analysis of results by employing MANOVA further supported the earlier findings that there was a significant difference in scores on LDT for Kannada ($p<0.006$) and English ($p<0.000$) languages between Study 1 and study 2. Details are shown in Table 5.

Table 5: Tests of Between-Subjects Effects

Source	Dependent Variable	df	F	Sig.
study	English	1	33.662	**.000**
	Kannada	1	8.262	**.006**
Error	English	43		
	Kannada	43		

Paired sample t-test was conducted to tease out the combined effect derived from collating data from study 1 and study 2. The results showed that there is a statistically significant difference in the RT between the two languages in Study 1 but no significant difference in the RT between the two languages in Study 2 as shown in Table 6.

Table 6: Paired sample t-test

		Study 1		
		t	df	Sig. (2-tailed)
Pair 1	English - Kannada	3.690	29	0.001
		Study 2		
		t	df	Sig. (2-tailed)
Pair 1	English - Kannada	-1.432	14	0.174

The results indicate that teachers who are non-native speakers of Kannada and English did not

show differential proficiency in Kannada and English languages whereas there is a difference in the language proficiency in the two languages under study in native speakers who are not teachers (Study 1). The likelihood of absence of significant difference in mean scores for RT of participants in Study 2 is speculated to be due to the lower mean scores compared to that of participants in Study 1. Therefore, confidence intervals were explored at 95% level for mean scores to fix the lower and upper limits of performance for both Study 1 and Study 2. Table 7 shows the lower bound and the upper bound values of the RT obtained using 95% confidence interval. The lower and the upper bound for Kannada in Study 1 were 1468.36 & 316.77 and 1100.91 & 878.99 in Study 2 respectively. Similarly, the lower and the upper bound for English in Study 1 were 1590.39 & 1970.51 and 860.21 & 1100.84 in Study 2 respectively. The confidence interval limits indicated that the teachers' performance on LDT (Study 2) was superior compared to the native speakers of Kannada (Study 1) as shown in Table 7 & Figure 2.

Table 7: 95% Confidence Interval for mean scores

Lang.	Study	Mean & SD	Lower Bound	Upper Bound
Eng	1.0	1780.46 (508.99)	1590.39	1970.52
	2.0	980.52 (217.26)	**860.21**	**1100.84**
Kan	1.0	1468.36 (405.97)	1316.77	1619.96
	2.0	1100.91 (400.72)	**879.00**	**1322.82**

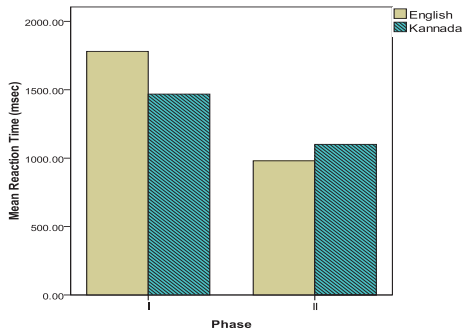


Figure 2 : Mean R.T on LDT for Kannada & English in Study I and Study II

Discussion

Assessment of bilingual proficiency in primary school teachers using online task with LDT paradigm suggested that the teachers were less proficient in Kannada (mother tongue of children) compared to English (the medium of instruction). As per the Third All India Education Survey (Sharma, 2001), 58 languages find a place in the school curricula and 47 are used in public administration at various levels. India is a multilingual and multicultural nation and therefore, there is coexistence of more than two or three languages in almost all the states of India. The National Policy on Education (www.Departments.India.org) by the Government of India proposed several policies among which, the Three Language Formula (TLF) is an important proposition to the multilingual context of India. As a consequence of this national policy for education, there are many challenges in the educational sector, specifically development of measures for language proficiency in teachers who are non-native speakers of the language(s) of children.

Survey conducted by Shanbal & Prema (2007), Khurana and Prema (2009) indicated that when the native language is not the language of instruction, the use of the non-native language gets restricted to school environment with the predominance of the native/local language for other communicative purposes. In school set-up, the language teaching practices is so designed that the ***students learn languages through subjects rather than learning subjects through languages.*** Consequently, students fair poorly both in subjects as well as language. The challenges of bilingual education can be successfully met provided suitable measures are taken-up to empower teachers to meet the demands of bilingual education. The survey conducted on a random sample of fifteen teachers using the online assessment tool for language proficiency indicated large differences in the teachers' language proficiency in their non-native language (Kannada and English) that are the school language of the State where the study was conducted. While it is widely accepted that teachers' language proficiency is so essential to either communicate or impart educational concept for bilingual children in the school set-up, there is an immense need for the system of education in India to gear-up to meet the requirements of bilingual and multilingual children.

Agnihotri (2011) commenting on the classical paradigm of a classroom comprising of a 'teacher', a 'classroom', a 'textbook' and a 'language' emphasized the need to re-examine and re-work the concepts of MLE (Multilingual Education). He reiterates that in a multilingual classroom, space be given to all languages. And that, giving spaces to all languages does not require the teacher to know all the languages that the children in a classroom use. However, the teacher should emulate how children, despite having varied linguistic resources, interacted with

each other while playing. Teacher should learn to 'play with children' and use language as a tool for empowerment. In the present study, the teachers' proficiency in the languages of children (Native language, Kannada and school language, English) does not permit this to happen in the classroom context. .

In view of the above findings, empowerment of in-service teachers should be taken up by offering additional requisite skills to manage MLE system. Specially designed courses through correspondence mode (conventional distance education and learning or through virtual classrooms) appears to be the best option in view of the availability of technology. It is possible to rope-in a large number of teachers if this mode of skill delivery is made viable thus speeding up teacher empowerment. Reorienting education to improve quality outcomes requires education system that is geared to meet the challenges posed by linguistically diverse population of India. The discrepancy in the demand vs. supply of quality educators in bilingual medium is an important issue to be seriously viewed and pursued if India has to meet the vision and mission of 'Education for All'.

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