

Impact of L2 Orthography on Reading Accuracy of L1: An Evidence from the Children of Grade 3

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Abstract

The present research focused on investigating the impact of increased exposure to second language orthography (English), through adopting it as a medium of instruction, on reading accuracy in L1. This was expected that increased exposure to L2 might support L1 reading accuracy. The sample of the study was 8-9 years old grade, 3 children. The children were selected from Private sector Urdu, and English medium schools located in an underdeveloped district of Punjab, Pakistan. Although the students were highly exposed to Urdu orthography, yet it could not have the advantage to get better reading accuracy in Urdu. Meanwhile, the children at English medium schools scored much higher in reading accuracy in Urdu. This better performance by the children from English medium schools might be a positive transfer of reading skills in a second language to reading skills in the first language.

Keywords: L2 Decoding Exposure, L1 Reading Accuracy, Cross-Linguistic Transfer, Opaque Orthography

Introduction

It is recommended that reading should be learned in the first language, which would later facilitate a smooth transfer to the second language reading (Lundberg, 2002) as it might not be easy to learn to read in a second language directly. There is also evidence of some children in Singapore who performed better in L2 reading in English than children of the same age who were native English speakers (Elley, 1994). Although the source of teaching in Singaporean schools is English, yet more than 70% of students have another home-based language (Tamil, Chinese, Malay, & Hindi). L1's of those children are different from English in all linguistic aspects, e.g. grammar, phonology, and lexis. Despite all these differences, by the age of 9, they read so well in English that they beat native English children (e.g. in Ireland). Following this example, L2 readers cannot read better in their second language than native speakers of that language (Wagner, Spratt & Ezzaki, 1989).

Mishra & Stainthorp (2007) observed the performance of a big sample of fifth-grade students on measures of word reading, phonological awareness, and pseudo-word reading in Oriya (their L1) and English (their L2). Oriya has an alpha-syllabary orthography. It has graphemes for consonants and vowels (such as alphabetic system), but orthographic representations are symbolized as consonant-vowel blends. Two groups of children were selected. The first group had joined school teaching through Oriya, where the medium for literacy was Oriya from grade 1 and learning of English was begun from grade 2. Another group was from English-medium schools who were taught through English from grade 1 and learning of Oriya was started from grade 2.

The findings were that phonological awareness (PA) in Oriya (Mishra & Stainthorp, 2007) helped considerably in reading both Oriya and English words in the children from the Oriya-medium schools. Still, these PA measures only added to pseudo-word reading in Oriya and word reading in English in the children from the English medium schools. There was a contribution of phonological awareness in English for English word reading and pseudo-word reading for both groups. The findings

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suggest that when awareness of phonemes is good, it can enable the child to read a writing system with a small grain size. It may also enable the reading of a writing system with an intermediate grain size. Still, the procedure might not be possible the other way round. Recognition of larger phonological units that correspond to graphemes may assist reading words in orthography with intermediate grain-size (Ziegler & Goswami, 2006). Better recognition of the smaller units is required for reading another orthography if its grain size is small. Therefore, the transfer of phonological awareness to help word reading is not equal across languages. It might be estimated by the features of the orthographies of the languages as well as by the factor whether the first literacy language is also the language that was spoken first (Mishra & Stainthorp, 2007). Following a hypothesis on reading, (Ziegler & Goswami, 2006), missing vowel sounds in the Urdu writing system do not permit sound manipulations at the phonemic level, but at the syllabic level. Frost (2006) proposes that the Hebrew that has the same problem as that of Urdu, the effective level of manipulation is not the phoneme, but the syllable (consonant- vowel strings).

Geva & Siegel (2000) also supported the script dependent hypothesis. It was noticed in their study that children were able to read their transparent L2 Hebrew script more accurately than their L1 English (a deep orthography). They concluded that in a less complicated script, the small kids tend to develop the recognition of words comparatively more quickly. It is reported that children having an awareness of the recurring statistical patterns in their L1 would be inclined to transfer their skills in recognizing those features in their L2. In the absence of these systematizing skills in the L1, a transfer to L2 is not possible (Gottardo et al., 2001; Durgunoglu, 2002).

Some other observations were made in another study (Koda, 1999) regarding the cross-language transfer. A few salient things, which were noticed in the study are (a) L1 alphabetic experience increases L2 intra-word structural consciousness (b) ESL learners, irrespective of their L1 backgrounds, are considerably tended to use their visual experience as a basic hint (clue) during orthographic processing (d) differences in L1 processing practice are directly associated with procedural variations in L2 decoding (reading).

Similarly, Cárdenas-Hagan, Carlson, and Pollard-Durodola (2007) showed the transfer of L1 letter naming skill and sound awareness from L1 (Spanish) to L2 (English). The results of the research revealed that Spanish-speaking pupils having good Spanish letter naming and good knowledge tended to present good skills in English letter naming and knowledge of sounds. English language learners with low Spanish and English letter naming skills and sound knowledge tended to present good skills in English letter naming and knowledge of sounds only when they were instructed in English. Therefore, "*letter naming and sound identification skills*" were greatly correlated across languages at very initial stages of literacy training.

In the crowd of many studies focusing on the transfer of language skills from L1 to L2 (e.g. Kim, Liu, & Cao, 2017; Hopp, 2017); or the transfer of language skills in bilinguals (e.g. Lallier & Carreiras, 2018) we find a very few studies talking about the transfer of skills from L2 to L1. A series of studies (Kecskes & Papp, 2000; 2003; Jarvis, 2003; Cook, 2003) acknowledged the transfer of language skills from L2 to L1 and vice versa. They wrote the first book ever discussing the effect of foreign language (FL) learning on first language (L1) processing. They argued that the development of many languages at the same time is an interactive process. This process is characterized by changes of different nature and results in a common core conceptual ground with two or more language networks that regularly interact with each other. This study, for the first time, attempts to explore the effect of L2 orthography on L1 reading skills.

Urdu language is spoken throughout the country in Pakistan and it is practiced as a language for teaching-learning in all public sector schools. This is a common observation among teachers in Pakistan that if they start literacy training in both their L1 and L2, simultaneously, they learn to read and write in English earlier than Urdu. Despite the matter that the children are already exposed to Urdu orally, there are some features of Urdu orthography which make it difficult to read. Urdu script has a complex cursive nature in which different graphemes have the same shapes, only with the difference of number and positioning of dots. Representation of vowels with diacritics, and even the absence of those diacritics makes it even worse to read (Rao et al., 2010; Mirdehghan, 2010). Another factor is many: 1 letter to sound correspondence.

English has an opaque orthography as well (Wimmer & Goswami, 1994). The mappings at the grapheme-phoneme level are fairly inconsistent, mainly, the vowel graphemes are unpredictable

and ambiguous. Therefore, the beginner readers have to be more adaptive in using varieties of direct accessing strategies to pronounce words, memorizing spelling patterns to develop a lexicon for recognizing orthographic units to create analogies for new words reading. The context-sensitive grapheme-phoneme mappings could also be relied on. We have this indirect confirmation that the children from transparent orthographies (like German) may not have an initial stage of logographic reading as the readers of opaque orthographies (like English) are supposed to have. Wimmer and Hummer (1990) observed that most of the mistakes committed by learning to read German-language were meaningless words, on the contrary, the children learning to read English made errors real words errors (Stuart & Coltheart, 1988).

There are 2 types of schools included in this study i.e. Urdu medium private sector schools, and English medium private sector schools. In the latter schools' content and language integrated learning (CLIL) is in practice.

Coyle, Hood, & Marsh (2010) defined CLIL as it includes the classroom activities in which a foreign language is used as an instrument to learn a subject other than languages. The subject which has a combined role of language and the subject's content (Marsh, 2002:58). The implementation of this specific term was a shift towards defining the nature of CLIL among the surfeit of related approaches like content-based instruction, bilingual education, immersion, and so on. Although CLIL shares certain features of the learning-teaching process with these, yet it works along with a gamut of the foreign language and the subject (non-language) content without identifying the status of one over the other.

Prediction

This study is interesting as it is focusing on observing the effect of increased exposure in L2 on L1 reading skills. This is predicted that increased exposure and practice of L2 decoding/reading skills through the medium of instruction through content and language integrated learning (CLIL) might support L1 reading skills. Therefore, following the observations of Mishra & Stainthorp (2007) that the reading skill in orthography with small grain size can help reading an orthography with a relatively bigger grain size we predict that the children studying at English medium schools, with comparatively far less exposure to Urdu, might be able to perform at the reading task with equal or better accuracy.

Material and Method

The sample in the current research was 160 children of grade 3(96 boys & 54 girls). They were 8 and 9 years old. The children were selected from both Urdu and English medium schools in the private sector. The selected schools were located in an underdeveloped area of south Punjab, Pakistan. The children belonged to the population of the main city as well as the peripheral villages.

Languages

The children spoke Punjabi as their first language. Urdu is the national language, medium of instruction, another L1 for many of the children, and the language of mass media. English is the second language in Pakistan. It is also a medium of instruction for some schools, however a medium of instruction for higher classes. The schools that employed English as a source of teaching, they make use of Content and Language Integrated Learning (CLIL). The students of these schools belong to families with high socioeconomic status. Urdu, in these schools, is taught as a mandatory subject.

Schools and Sampling

The children in the present study were selected from 4 English medium schools, and 4 Urdu medium schools. These schools were selected based on convenience in approach as well as representation. The samples were pointed out by the teachers to represent students with all types of reading skills. They were studying in grade 3. The students were a mixture of typical reading skills, and of developing reading skills in both their L1 and L2. Children from English medium schools were better at English literacy skills, while the children from Urdu medium schools did not have similar English skills.

It was a test-based study; a short Urdu text was given to them to read. The text was from the textbook of class 3 and the children from Urdu medium schools had already read that in earlier chapters. They were asked to read the text, and their number of errors were counted in reading to calculate accuracy in reading as it is defined as the percentage of words read correctly (Howell, Fox, & Morehead, 1993). A t-test is used to find the difference in Urdu text reading accuracy between Urdu and English medium school children.

Results

Before starting the original analysis, a frequency distribution curve of reading accuracy scores was

drawn through SPSS to ensure if the data is symmetrical. The data came out to be negatively skewed. Therefore, the data for reading accuracy had to be transformed by using Log. The transformation was successful and the skewness got reduced from -.2.13 to .76 for the typical readers and from -1.77 to -.31 for the developing readers.

A t-test was applied to find out the difference between the Urdu reading accuracy scores of children from Urdu, and English medium scores.

Table 1. *Difference in reading accuracy of an Urdu text for Urdu and English medium schools.*

Dependent variable	F	t	df	Sig. (2-tailed)	SED
Reading accuracy	2.79	-1.59	148	.11	.069

DF=degree of freedom, SED= standard error difference.

The difference of scores on Urdu text reading accuracy between Urdu and English medium schools was measured through a t-test (Table 1.), which did not provide any significant differences between reading accuracy scores of both schools.

Table 2. *Difference of scores on Urdu text reading accuracy*

School Type	Mean Score	N	S.D.
Urdu	.45	77	.44
English	.56	73	.40
Total	.51	150	.42

N=Number of students, S.D. = Standard deviation

Although the t-test could not show any significant differences between the two groups' scores, yet a mean score report (Table 2.) showed a preference for English medium schools' children in reading accuracy scores.

Discussion

According to the prediction of the study, greater exposure to English caused the children to stand on the same footing, or a little better in performance in Urdu reading accuracy. Although, the t-test performed in the study did not show any significant difference between reading accuracy scores of children studying through different medium of instruction, Urdu medium schools in Urdu reading accuracy, yet a view of the descriptive table of scores shows slightly better scores of children from English medium schools than the children from Urdu medium schools on Urdu text reading accuracy. We here should keep in mind that the exposure to Urdu of the children at English medium schools is only limited to the Urdu (Language) subject. The study supports the grain size hypothesis (Ziegler & Goswami, 2006), and the observations of Mishra & Stainthorp (2007) that the reading skill in orthography with small grain size can help reading an orthography with a relatively bigger grain size. The results are also in line with the ideas of Frost (2006), which he proposed for Hebrew.

The better achievement (or even similar score) of the children of English medium schools might be due to increased exposure to a deep small-grained orthography (English) which helps to shift reading skills to another opaque orthography (Urdu) with relatively big grain size (Farukh & Vulchanova, 2015; Koda, 2007; Bialystok, Luk, & Kwan, 2009) despite a little exposure to Urdu.

This might be an interesting study showing the positive effect of L2 orthography (interaction of orthographies) on L1. It might be concluded that greater exposure to English (L2) could help to acquire better reading skills in Urdu. This observation might be limited to reading accuracy as a previous study (Farukh & Vulchanova, 2014) showed a better performance of Urdu medium schools on reading fluency by the same sample.

This study complies with the ideas of (Kecskes & Papp, 2000; 2003) that if the decoding system of L2 is better developed due to increased exposure and experience, it might positively interact with L1 decoding skills, in turn, the accuracy of L1 reading skills might be benefitted.

There are a couple of delimitations of the study. The first one is that the standard of education was not controlled, which is considerably better in English medium schools. Only the middle/upper-middle class can afford these schools. Therefore, social status could be another factor, which was not controlled for. These 2 factors could be controlled in a future study with similar objectives. A study could be conducted at different school grades are with a comparatively large sample so that the positive impact of L2 (if present) could be observed. The second delimitation is that the students were not controlled for their IQ measures which might have affected their reading accuracy.

Although the children are already exposed to Urdu phonological system before the literacy

training starts. Still, reading in Urdu is difficult to read for many of the students (even though Urdu is their L1) due to its complex orthographic system, which makes it difficult to read. Therefore, the pedagogical implication of the study could be that both Urdu and English medium of instruction could be started together in the early stages of literacy training.

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