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## Variables associated with Grade R English Additional Language acquisition in multilingual rural Mpumalanga schools

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In a previous study Moodley, Kritzinger and Vinck (2014) found that formal English Additional Language (EAL) instruction contributed significantly better to listening and speaking skills in Grade R learners, than did a play-based approach. The finding in multilingual rural Mpumalanga schools was in agreement with numerous studies elsewhere. Additional extraneous variables such as teachers' first language, qualifications, age and experience, and learners' first language and gender may also relate to EAL performance. The aim of the present study has been to determine whether these variables were significantly associated with learners' EAL performance scores. A matched two group comparison study was conducted, utilising 175 learners and 10 teachers from isiNdebele, isiZulu, Sepedi, siSwati and Xitsonga first language backgrounds. The English Language Proficiency standards assessment tool was used. Learners of IsiNdebele teachers and young qualified teachers performed better than other learners. Learners with isiNdebele as first language performed better than learners from other languages. No association between gender and learner performance was found. The advantage of isiNdebele speaking teachers and learners in EAL teaching and learning may relate to the many borrowed phonemes and words from English. Further research is required to strengthen the evidence.

**Keywords:** English Additional Language instruction; English Language Proficiency (ELP) standards assessment tool; Grade R; isiNdebele; isiZulu; Sepedi; siSwati; teacher qualifications; Xitsonga

### Introduction

There is a widely expressed concern with the underachievement of learners whose language of learning and teaching (LoLT) is different from their own (Flynn, 2007). Given that it can take five years or more for a learner to acquire academic competency in a second language (Clifford, Rhodes & Paxton, 2014), it is important to investigate variables that may be associated with English additional language (EAL) learning in schools, in order to address underachievement. Since Grade R is the foundation for formal Grade 1 learning, research conducted in the year preceding Grade 1 can guide the schooling system to develop improvement plans based on identified variables associated with EAL learning.

Multilingualism and EAL is a global phenomenon, but the proportional distribution differs widely across countries. In Australia, only 19% of the population speak a language other than English at home (Clifford et al., 2014). In the UK, approximately 15% of learners have EAL, and in London the percentage rises to over 50% (Marshall & Hobsbaum, 2015). According to Census 2011 language data, only 9,5% of the population in South Africa are English first language speakers, but most parents prefer the LoLT to be English (Statistics South Africa, 2012). There is a growing local and international interest in EAL learning in Grade R. English is preferred, as parents perceive their children to compete better in the global market when they finish school, thereby providing them with an advantage over other learners who are not English proficient (Withey, 2012).

Although South African learners speak a variety of home and additional languages proficiently, the education system still does not cater for or reflect this multilingual reality. English remains the preferred language of teaching and assessment, to the detriment of those learners who speak African languages (Jordaan, 2011). Thus, increasing numbers of children are entering education with limited ability to speak English. This raises important questions for opportunities of attainment and achievement (Withey, 2012). Children who are learning English as an additional language may start school with smaller vocabularies than their monolingual peers (Marshall & Hobsbaum, 2015). EAL learners need to gain English fluency rapidly in order to do well in school.

There appears to be a paucity of research on variables relating to EAL acquisition in South Africa. In a previous study, Moodley et al. (2014) found that formal EAL instruction contributed significantly better to English listening and speaking skills in Grade R learners, than a play-based approach. Apart from the educational approach followed in the classroom, certain teacher and learner variables could also relate to EAL learner competency in Grade R (Xu, 2010). Cognitive development and first language proficiency are the key variables associated with second language acquisition (Haneda & Wells, 2008). Xu (2010) adds that teachers' first language, their qualifications and teaching experience are important variables contributing to develop learners' EAL acquisition.

In the US, not all teachers are bilingual in Spanish and English (Wong-Fillmore, 1997). It was found that bilingual teachers produced better EAL learner scores, since they focused much attention on English and Spanish words that have similar meanings and pronunciation (Wong-Fillmore, 1997). As a result, Spanish speaking learners are able to master English faster when taught by teachers who could also speak Spanish, than learners who are taught by teachers who cannot speak Spanish (Wong-Fillmore, 1997). Teachers who could

speak only English produced lower EAL learner scores, since they could not relate Spanish words to English. Xu (2010) also found that learners' first language impacted on their EAL proficiency. Spanish speaking learners acquired English faster than learners from other language groups in the US, since there are similarities between English and Spanish words (Xu, 2010).

Barbara (2008) found that teachers who had postgraduate qualifications, attained higher EAL learner scores, when compared to teachers with first degrees, while Xu (2010) found that teachers with more than ten years of teaching, produced better EAL scores in comparison to teachers with less teaching experience. A teacher's age appears not to be a determining variable in learners' success in second language learning (Berk, 2006). Ramsey (2006) found that girls performed better in EAL assessments when compared to boys, especially in listening competencies. In contrast, Reid (2009) found that boys scored better in speaking competencies as compared to girls. It therefore appears that certain teacher characteristics, such as a postgraduate qualification and teaching experience of more than ten years, can contribute to better EAL acquisition in learners, while learner characteristics, such as having Spanish as a first language support EAL learning better than those from other language backgrounds in the US. More research is required in order to establish whether boys or girls are at an advantage to acquire EAL, since conflicting results were obtained regarding gender outcomes. It is also not clear to which extent the context, such as marked class differences, or rural versus urban environs, would contribute to successful EAL learning. If more variables that contribute positively to EAL learning can be isolated, steps can be taken to influence teacher training, both at pre- and in-service levels, in order to improve Grade R learners' EAL proficiency and thereby enhance school readiness.

There is a lack of specialist teachers with sufficient understanding of how to develop EAL literacy skills in learners (Flynn, 2007). In addition, poor teacher expectations can lower the performance of learners (Flynn, 2007). Since EAL learners do not have comparable early English language experiences, it is important that opportunities are provided for them to engage in dialogic interaction with their teachers and other learners (Haneda & Wells, 2008). Since proficiency in the LoLT contributes greatly to academic success (Owens, 2012), effective teaching methods should be employed when teachers and Grade R learners originate from multilingual backgrounds.

In this study, the following research question was posed: Apart from formal instruction found to be a variable contributing to EAL learning (Moodley et al., 2014), which other variables could contribute to improved EAL acquisition in Grade R

learners from rural schools in Mpumalanga? If additional variables contributing to improved EAL learning can be found, changes can be made for increased preparation for Grade 1.

## Method

### Aim

The aim of this study was to determine whether there is an association between the following extraneous variables and Grade R learners' EAL scores: teachers' first language; learners' first language; learners' gender; and teachers' qualifications, age and experience.

### Design

A static two-group comparison design was used. All schools in rural Mpumalanga with Grade R classes ( $N = 1,003$ ) were categorised into either play-based or the formal instructional EAL learning groups, according to school visit reports by Early Childhood Development (ECD) officials. From the two categories, ten study schools were randomly selected according to the five most prevalent first language groupings of the learners (isiNdebele, isiZulu, Sepedi, siSwati and Xitsonga). The names of all rural schools were put into ten different boxes, representing the two educational approaches and the five different language groups. One name from each of the ten boxes was drawn. Using this method of selecting, ten participating schools (two schools per language group) and 175 learners with their ten teachers were included in the study. There were no variables manipulated in this study.

### Ethics

The Department of Education of Mpumalanga and school principals gave permission that the research may be conducted, and the University of Pretoria granted ethical clearance to proceed with the research. Parents of all learner participants gave informed consent (some by means of interpreters) that their children may participate in the study. Informed consent was obtained from all teachers and learner participants gave assent to participate in the research.

### Participants

The teachers were all female, with a mean age of 38 years (27-52 years) and a mean of 7.3 years of teaching experience (2-20 years). Three teachers were in possession of a Grade 12 qualification only, while the rest had ECD NQF Level 4 and 5 qualifications. Their first languages varied as follows: 3: isiNdebele, 2: isiZulu, 3: Sepedi, 1: siSwati and 1: Xitsonga. Younger teachers were better qualified than older teachers. The teachers' first language profiles were almost similar between the two groups, except for a higher prevalence of isiNdebele as teachers' first language in the formal based group, and a higher prevalence of siSwati as teachers' first language in play-based classrooms.

None of the teachers had English as a first language, which would clearly have benefitted their facilitation of EAL skills in the sample. Selected teachers also differed in age, years of experience and qualifications. IsiNdebele teachers lived predominantly in the Nkangala District (predominantly isiNdebele residents) and siSwati teachers resided predominantly in the Ehlanzeni District (predominantly siSwati residents) in Mpumalanga. Most of the isiNdebele and siSwati teachers resided in the urban areas, but worked in schools in the rural areas.

Of the 175 learners included in the study, 88 were boys and 87 were girls, where learners were representative of the five language groups spoken in rural Mpumalanga. Learner participants were of the same age (five years of age by 30 June in the year of Grade R admission); were mainstream learners; had a similar duration of EAL learning (four months); a rural upbringing and a background of poverty. None of the child participants were born preterm, or had had low birth weight.

#### Material

The ELP standards assessment tool, widely used in the US, was administered for data collection (United States Department of Education, 2007). The tool assesses English listening and speaking skills, as a foundation for formal Grade 1 learning. Some activities in the ELP tool had been adapted for the South African context, using stories, poems, rhymes and songs commonly told and recited in rural Mpumalanga. The ELP tool has numerous practical advantages. The tool is easy to use in the classroom, since the behaviour or skill is either present or absent, where behaviours to be observed are clearly specified, and the tool can be used without the child being overly aware of the observation (Dickson, 2009; Espinosa, 2007). The purpose of the ELP tool is to identify EAL learners at risk of demonstrating incompetency in English. According to Abedi (2004) and Kagan (2007) the tool is appropriate to Grade R learners' age and developmental level.

#### Procedures

A pilot study was conducted to test out all procedures. Grade R teachers in the selected schools were trained as raters of the ELP tool, such that all learners in the sample might be assessed at approximately the same time. For some of the ratings, a teacher and the researcher rated learners' competency independently.

#### Data Analysis

Descriptive statistics were performed to determine

means and frequency counts of the participant characteristics. Lomax (2007) and Silverman (2005) were used to determine whether data were normally distributed, and if equality in variance between the two groups was established. The two groups were almost equal, as there were 86 learners in the sample that were exposed to the play-based approach, while 89 learners were subjected to the formal instruction approach. It was observed that the teachers were strict in adhering to the expected instructional pattern. Using the Statistical Package for the Social Sciences (SPSS), analysis of variance (ANOVA) was conducted to determine if there was a statistical difference between the different independent variables (facilitation, teachers' first language, learners' first language, learners' gender, teachers' qualifications, teachers' age and teachers' experience) and the dependent variable, Grade R learner ELP scores. The statistical conclusion after conducting a data analysis should have been whether the scores from the two groups were homogenous or whether they differed significantly from each other (Lomax, 2007). A two-way ANOVA was also conducted to test the effect of facilitation on learners' gender, learners' first language, teachers' qualifications, teachers' experience and teachers' age on Grade R learner performance scores. The two-way ANOVA therefore determined the interaction effect of each of the independent variables with the main effect (facilitation) on Grade R learners' performance scores (Lomax, 2007). Post-hoc testing was also conducted. Means of the groups were compared by using the Tukey Honesty Significance Difference (HSD) multiple range test.

#### Results

##### Teachers' First Language and Grade R Learners' EAL Scores

The five languages spoken by teachers in rural Mpumalanga were considered for their possible association with learners' EAL scores. Possible associations between teachers' first language and the learners' ELP total, speaking and listening scores were determined. Most teachers in the study sample had isiNdebele (30%) and Sepedi (28%) as their first language, with isiZulu (17%), siSwati (15%) and Xitsonga (10%) less prevalent amongst the teachers. Since the schools were randomly selected, every teacher in Grade R rural schools in Mpumalanga had an equal opportunity to have been included in the study.

The difference in learner performance scores across the different teachers' first languages, for both facilitation methods, is described in Table 1 and Figure 1.

**Table 1** Mean ELP scores of learners receiving facilitation from teachers with different first languages

ELP standards assessment tool components	Teacher's first language	Total number of learners	Mean	Standard deviation	Standard error
Total Score (maximum 11)	isiZulu	30	5.00	2.913	.532
	Sepedi	50	5.32	2.386	.337
	siSwati	24	2.50	1.351	.276
	<b>isiNdebele</b>	<b>53</b>	<b>6.30</b>	<b>2.180</b>	<b>.299</b>
	Xitsonga	18	2.83	.786	.185
	Total	175	4.92	2.574	.195
Speaking Score (maximum 7)	isiZulu	30	2.37	.669	.122
	Sepedi	50	2.54	.579	.082
	siSwati	24	2.17	.482	.098
	<b>isiNdebele</b>	<b>53</b>	<b>2.66</b>	<b>.478</b>	<b>.066</b>
	Xitsonga	18	2.22	.548	.129
	Total	175	2.46	.575	.043
Listening Score (maximum 4)	isiZulu	30	1.07	.980	.179
	Sepedi	50	1.64	1.139	.161
	siSwati	24	.25	.676	.138
	<b>isiNdebele</b>	<b>53</b>	<b>2.45</b>	<b>1.294</b>	<b>.178</b>
	Xitsonga	18	.61	.502	.118
	Total	175	1.49	1.312	.099

Table 1 shows that learners who have teachers with isiNdebele as their first language achieved the best ELP scores. Learners who had teachers with siSwati as their first language achieved the worst scores. Those learners only had four months exposure to English, and therefore, did not achieve high scores. This result is further illustrated in Figure 1.

A one-way ANOVA was carried out to evaluate whether this association between language and the performance scores of the learners was statistically significant.

According to Table 2, the slightly higher number of isiNdebele speaking teachers, in comparison to teachers speaking other languages, was controlled by the ANOVA procedure. The results of this analysis showed highly significant statistical differences between the learners' performance scores for different teachers' first languages ( $p = .00$  for total scores;  $p = .001$  for speaking scores;  $p = .000$  for listening scores).

In order to determine which languages were significantly different from each other, a post hoc Tukey analysis (Field, 2009) was carried out. See Table 3.

The results in Table 3 indicated that teachers who had isiZulu as their first language achieved significantly higher learner performance scores than teachers with siSwati and Xitsonga as first languages. Teachers who had Sepedi as their first language achieved higher learner performance scores than teachers who had siSwati and Xitsonga as first languages. Teachers who had isiNdebele as their first language achieved higher learner performance scores than teachers with Xitsonga as their first language.

In summary, the results indicated that the scores of learners based on the first language of the teachers can be organised in two groups: Group 1: isiZulu, Sepedi, and isiNdebele first language teachers produced significantly better performance scores than Group 2: siSwati and Xitsonga first language teachers. To see whether these observations were present in both facilitation approaches, the listening performance scores of learners' from the two facilitation approaches were compared. The comparison confirmed the earlier findings, namely that teachers with isiNdebele as their first language produced the highest performance scores in both approaches. There was not enough data in the Xitsonga group for further analysis. Similar findings were consistently observed in learners' ELP total and speaking scores.

These large differences should be explained further. The formal facilitation approach appeared to produce higher learner scores, irrespective of the teachers' first language, but learners taught by isiNdebele speaking teachers had even higher scores. It appears that isiNdebele teachers produced better Grade R learners' performance scores, especially in formal instruction classrooms. The reasons for isiNdebele learners achieving consistently good EAL scores will be discussed later. The preceding results will become clearer with the presentation of the results of the learners' first languages.

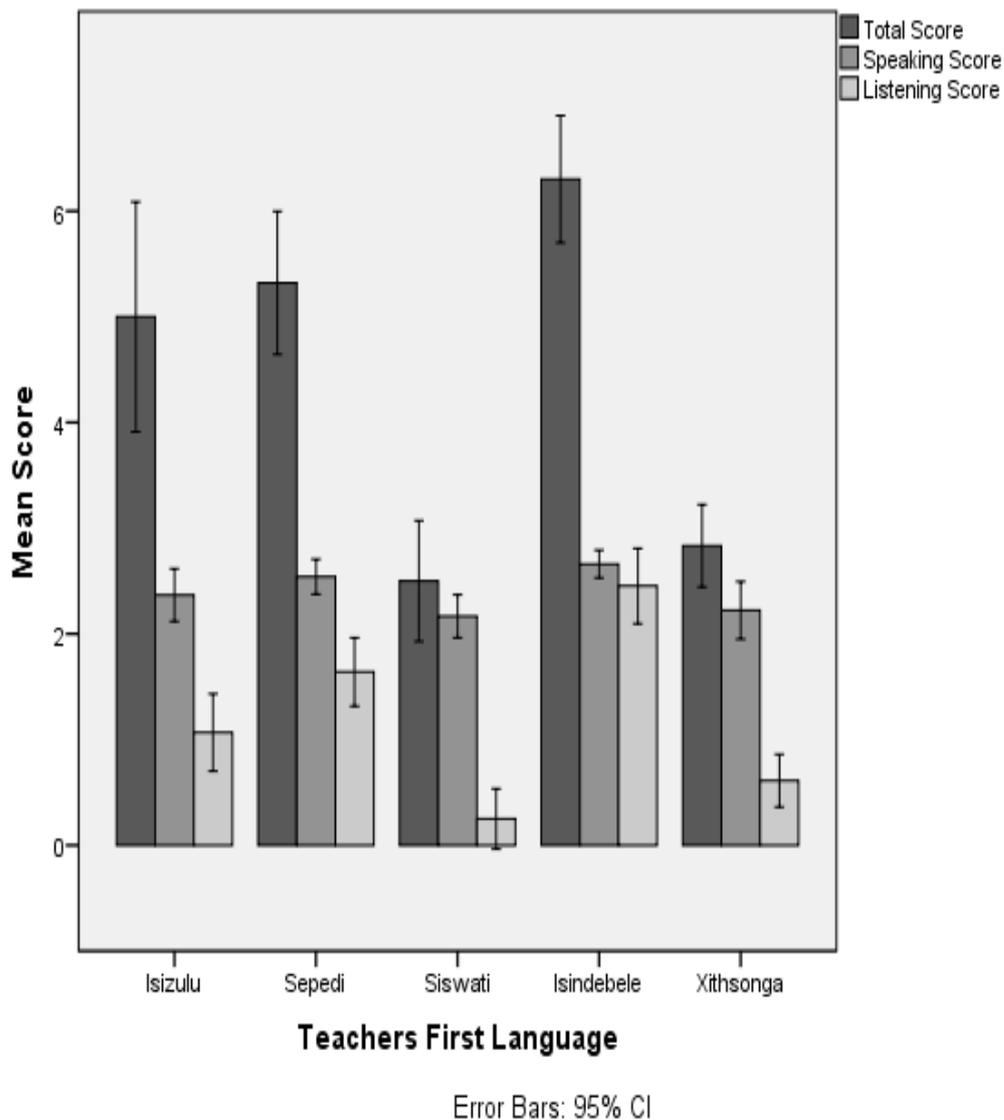
#### Learners' First Language and their ELP Scores

A possible association between learners' first language and their total ELP score, as well as on speaking and listening scores, respectively, was determined. The learners' first language profile

across the two facilitation methods is illustrated in Figure 2.

Figure 2 illustrates that most learners in the study population had siSwati and Sepedi as their first languages. In this study sample, isiZulu, isiNdebele and Xitsonga were less prevalent

amongst learners. The first language profile of the learners did not correspond with the first languages of the ten teachers. The learners were mostly Sepedi and siSwati speaking, while the teachers were mostly Sepedi and IsiNdebele speaking.



**Figure 1** Learner mean scores (total, speaking and listening scores) obtained from exposure to teachers’ different first languages

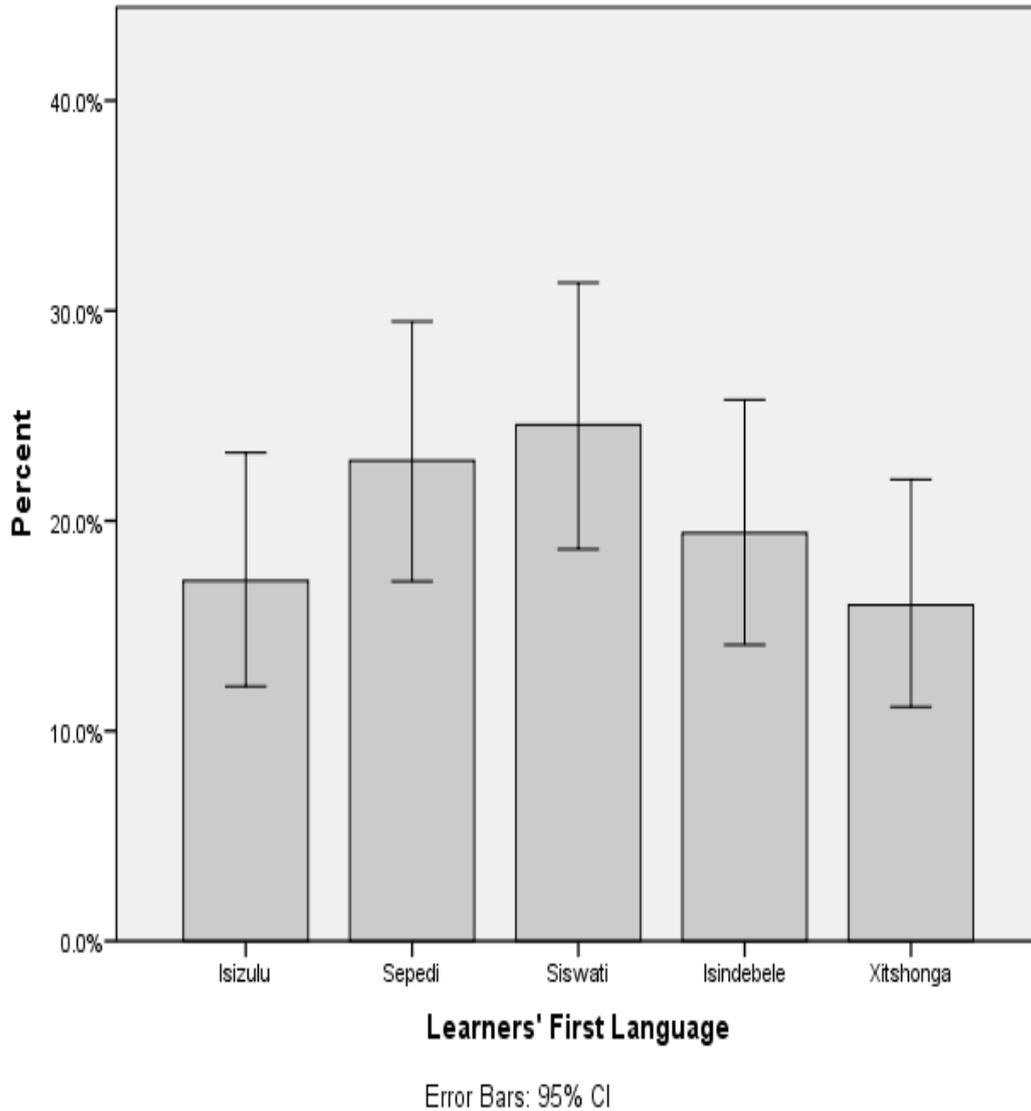
**Table 2** Association between teachers’ first language and learner performance scores

ELP standards assessment tool components		Sum of Squares	Degrees of freedom	Mean Square	F ratio	Significance
Total Score	Between Groups	328.330	4	82.083	16.923	.000
	Within Groups	824.550	170	4.850		
	Total	1152.880	174			
Speaking score	Between Groups	5.791	4	1.448	4.759	.001
	Within Groups	51.718	170	.304		
	Total	57.509	174			
Listening score	Between Groups	106.441	4	26.610	23.403	.000
	Within Groups	193.297	170	1.137		
	Total	299.737	174			

**Table 3** Post-hoc Tukey analysis of teachers' first language and learners' performance scores

Teachers' first languages	isiZulu	Sepedi	siSwati	isiNdebele	Xitsonga
isiZulu	-	<i>ns</i>	$p < 0.05$	<i>ns</i>	$p < 0.05$
Sepedi	<i>ns</i>	-	$p < 0.05$	<i>ns</i>	$p < 0.05$
siSwati	$p < 0.05$	$p < 0.05$	-	$p < 0.05$	<i>ns</i>
isiNdebele	<i>ns</i>	<i>ns</i>	<i>ns</i>	$p < 0.05$	$p < 0.05$
Xitsonga	$p < 0.05$	$p < 0.05$	<i>ns</i>	$p < 0.05$	$p < 0.05$

Note: *ns* - not statistically significant;  $p < 0.05$  - significant.

**Figure 2** Percentage of learners' first language in the study sample ( $n = 175$ )

The possible association between the learners' different first languages and the three different performance scores was determined. Table 4 presents the distribution of the different performance scores for each of the different learners' first languages.

As can be noted in Table 4, learners with isiNdebele as their first language appeared to perform systematically better in all the different

performance scores (total, speaking and listening scores). To evaluate whether this observation was statistically significant, and thus relevant, a two-way ANOVA was carried out, with the facilitation method (formal versus play-based) and the different learners' first languages (five languages) as independent variables and the three different performances scores (total, speaking and listening scores) as the dependent variables. See Table 5.

**Table 4** Distribution of the different ELP scores according to learners' first language group

ELP standards assessment tool components	Learners' first language	Total number in sample	Mean	Standard Deviation	Standard Error
Total Score (maximum 11)	isiZulu	30	5.00	2.913	.532
	Sepedi	40	4.73	2.287	.362
	siSwati	43	4.70	2.739	.418
	<i>isiNdebele</i>	34	5.65	2.436	.418
	Xitsonga	28	4.57	2.486	.470
	Total	175	4.92	2.574	.195
Speaking Score (maximum 7)	isiZulu	30	2.37	.669	.122
	Sepedi	40	2.50	.599	.095
	siSwati	43	2.47	.550	.084
	<i>isiNdebele</i>	34	2.56	.504	.086
	Xitsonga	28	2.39	.567	.107
	Total	175	2.46	.575	.043
Listening Score (maximum 4)	isiZulu	30	1.07	.980	.179
	Sepedi	40	1.35	1.075	.170
	siSwati	43	1.58	1.694	.258
	<i>isiNdebele</i>	34	2.00	1.279	.219
	Xitsonga	28	1.39	1.166	.220
	Total	175	1.49	1.312	.099

**Table 5** Total score output of the two-way ANOVA

Source	Type III Sum of Squares	Degrees of freedom	Mean Square	F	Significance
Corrected Model	1084.661a	9	120.518	291.494	.000
Intercept	4168.653	1	4168.653	10082.643	.000
Facilitation	1022.672	1	1022.672	2473.518	.000
Learners' First Language	11.030	4	2.757	6.669	.000
Facilitation * Learners' First Language	8.321	4	2.080	5.031	.001
Error	68.219	165	.413		
Total	5389.000	175			
Corrected Total	1152.880	174			

As seen in Table 5, the association of learners' first language with the total scores was significant ( $p = .000$ ), but there were no significant difference ( $p = .553$ ) between learners' speaking performance scores for the different languages. There was a significant difference ( $p = .000$ ) between the learners' listening performance scores across the different languages. IsiNdebele speaking learners performed better than speakers of the other first languages. Post-hoc Tukey testing revealed that a significant ( $p < 0.05$ ) better total performance scores were observed among isiNdebele and Xitsonga, siSwati, and Sepedi speaking learners. However, learners with isiNdebele as first language did not show significantly better total performance scores than learners with isiZulu as their first language.

To determine whether these same observations were present in both facilitation methods, Table 6 illustrates the distribution of the different

performances of learners for the two facilitation methods across the different learners' first languages. The interaction "*facilitation\* learners' first language*" was analysed during the two-way ANOVA.

As can be seen in Table 6, a significant difference of the total scores between the two facilitation methods and across the different learners' first languages was obtained. However, this significant difference was not observed for the speaking performance scores. For the total scores, learners with isiNdebele and Xitsonga as first languages performed significantly better in both facilitation methods. However, the profile for the other languages within each facilitation group differed. Within the play-based group learners with Sepedi as their first language had better total performance scores than learners with siSwati and isiZulu (Figure 3), while in the formal instruction group, learners with Sepedi as their first language

performed the worst (Figure 4). It is important to note that all learners still performed better in a formal based approach.

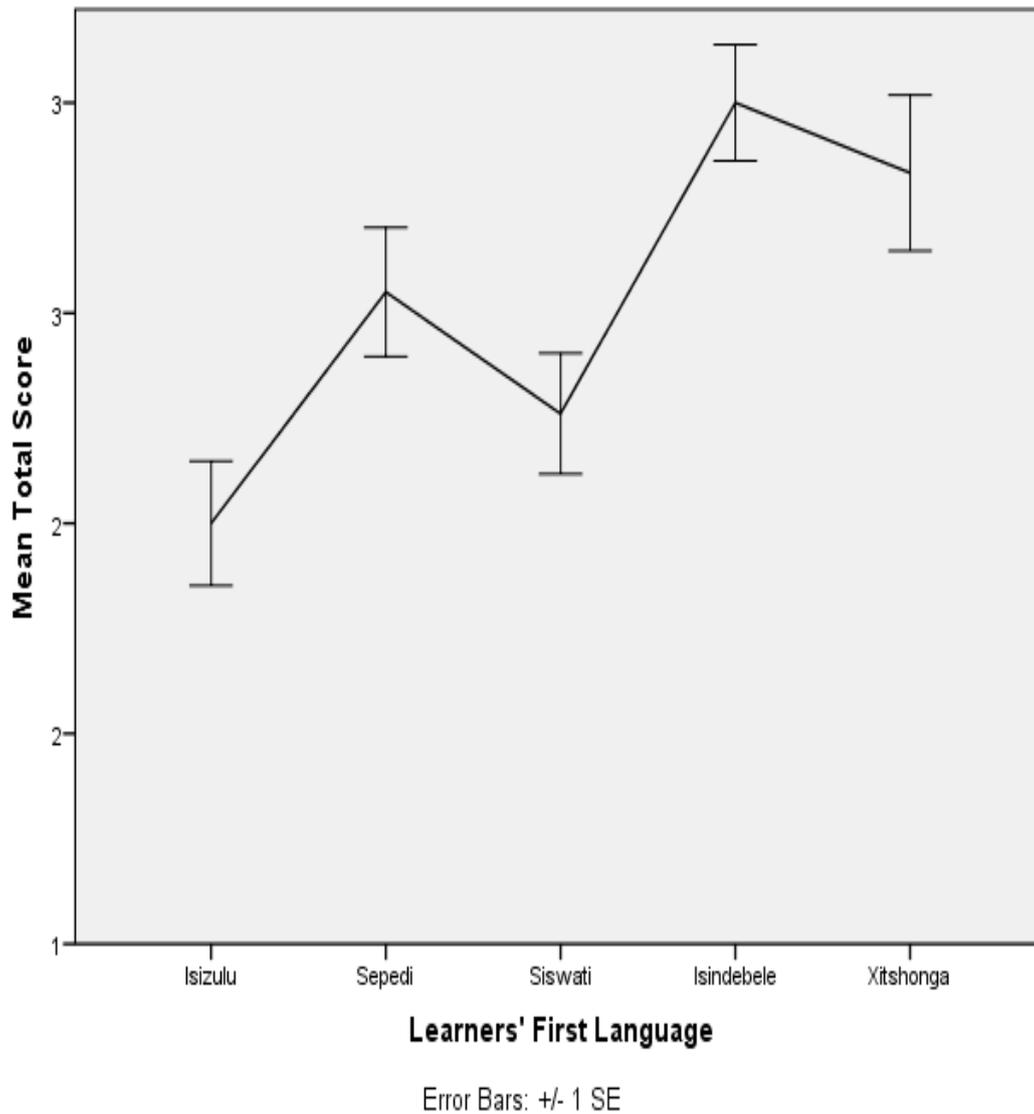
#### Learners' Gender and their EAL Scores

A possible association between learners' gender

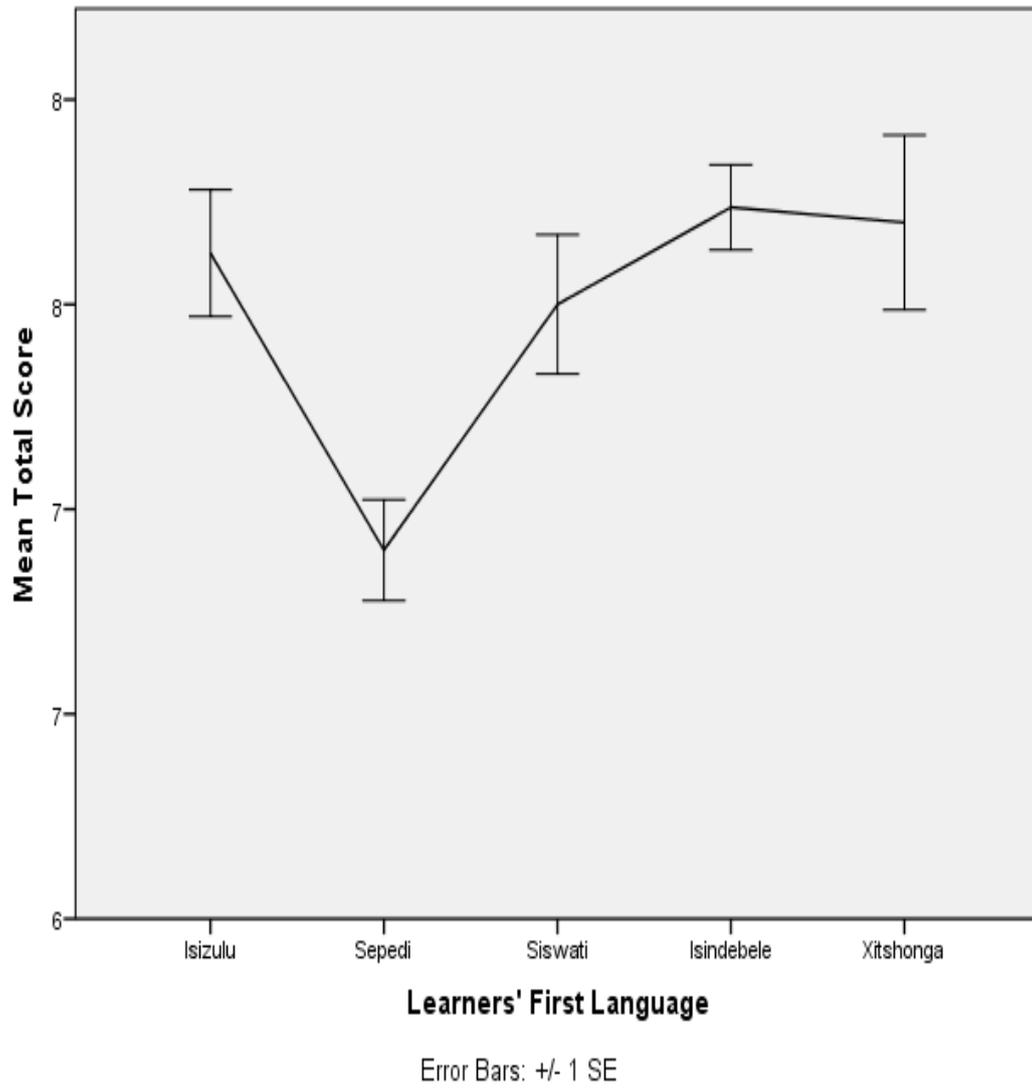
was determined on their total, as well as speaking and listening scores. There were almost the same number of boys (88) and girls (87) in the study sample. The distribution of the different performance scores according to gender is illustrated in Figure 5.

**Table 6** Distribution of total EAL scores

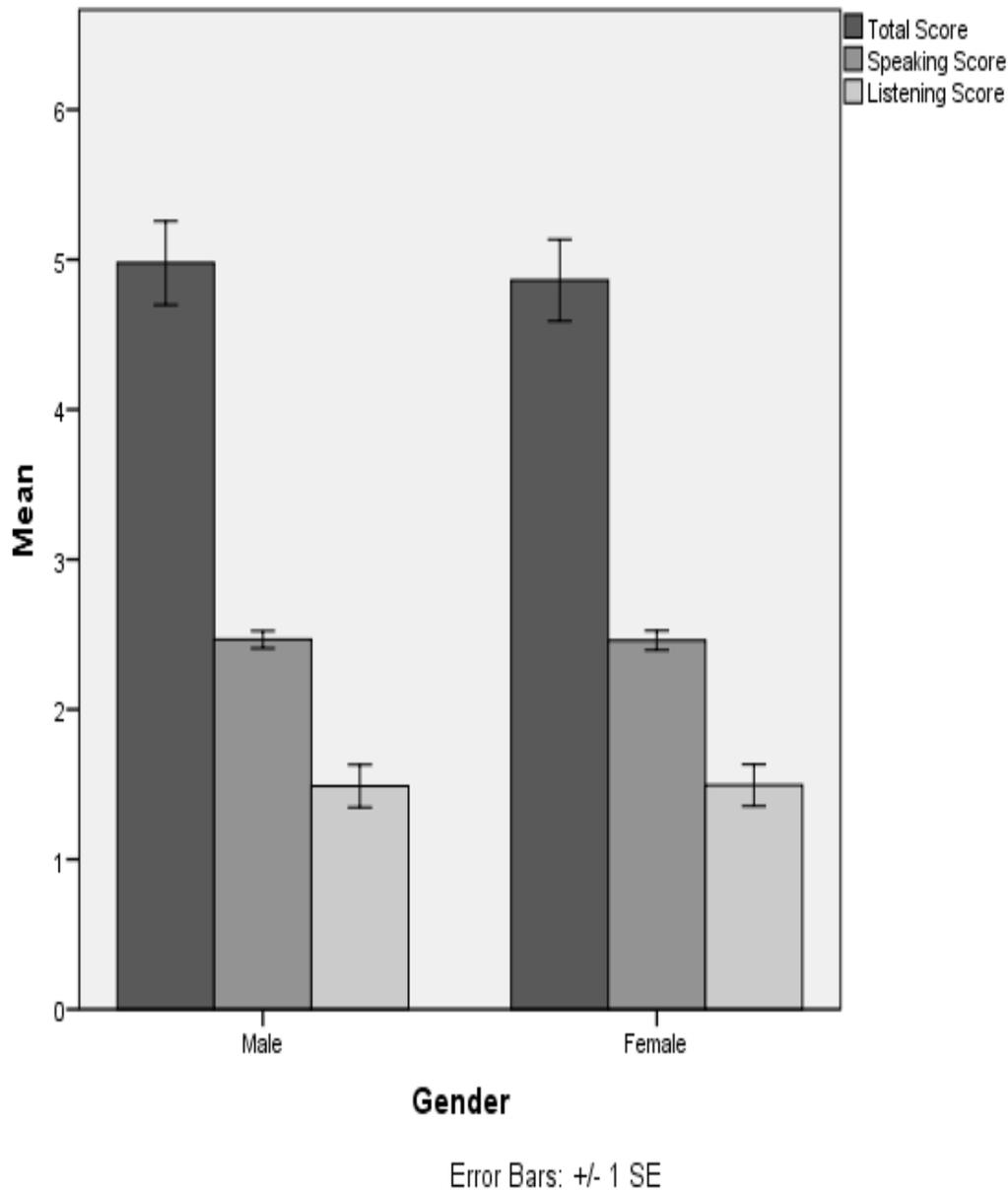
Facilitation	Learners' first language	Mean	Standard Deviation	Total number in sample
Play-based	isiZulu	2.00	.555	14
	Sepedi	2.55	.686	20
	siSwati	2.26	.689	23
	<i>isiNdebele</i>	3.00	.535	15
	Xitsonga	2.83	.786	18
Formal	isiZulu	7.63	.619	16
	Sepedi	6.90	.553	20
	siSwati	7.50	.761	20
	<i>isiNdebele</i>	7.74	.452	19
	Xitsonga	7.70	.675	10



**Figure 3** Mean total ELP scores of learners' first languages in play-based classrooms



**Figure 4** Mean total ELP scores of learners' first languages in formal instruction classrooms



**Figure 5** Performance scores of males and females in the study sample

A two-way ANOVA was carried out to determine whether facilitation and gender (independent variables) was statistically significant for learners' EAL performance scores (dependent variables). No statistically significant differences could be observed ( $p = .768$ ). This implies that in the total group, gender had no significant association with the different performance scores. To evaluate if this statement was also valid for both facilitation methods separately, a two-way ANOVA was carried out, showing that for all three scores, no significant differences were observed ( $p > 0.05$ ).

#### Teachers' Qualifications and Grade R Learners' ELP Scores

A possible association between teachers' qualifications and the total, speaking and listening scores of the learners was investigated. The distribution of the learners' scores according to their teachers' qualification and the facilitation method showed that very similar performance scores were obtained for teachers with Grade 12 and an ECD qualification, except for the total scores, where higher scores were observed for teachers having only a Grade 12 qualification. A two-way ANOVA was carried out so as to evaluate

whether the observed differences between the two qualification groups were statistically significant according to total score, speaking score and listening score. Significantly higher scores were obtained for both listening scores and total scores, when learners had teachers with an ECD qualification. This, however, could not be demonstrated for the speaking scores ( $p > 0.05$ ). The two-way ANOVA further demonstrated that this observation was also true for both facilitation methods separately.

**Teachers' Age and Grade R Learners' ELP Scores**  
A possible association between teachers' age and the learners' total, speaking and listening ELP scores was investigated. The distribution of the learners' scores according to their teachers' age and

the facilitation method is described in Table 7.

As can be seen in Table 7, higher performance scores for learners' EAL skills were obtained for younger teachers. As indicated earlier, younger teachers (below 35 years) were better qualified than were older teachers (35 years and above). A two-way ANOVA was carried out to evaluate if the observed differences between the age groups were statistically significant. Significantly higher scores were obtained for both speaking and total scores, when learners have younger teachers. This, however, could not be demonstrated for the listening scores ( $p > 0.05$ ). The two-way ANOVA further demonstrated that this observation was also true for both facilitation methods separately.

**Table 7** Distribution of the learners' scores according to their teachers' age and the facilitation method

a) Teachers' age: Total Score

Facilitation	Teachers' Age	Learner mean scores	Standard Deviation	Total number in sample
Play-based	35 years and above	1.00	.	1
	below 35 years	2.54	.724	89
	Total	2.52	.738	90
Formal	35 years and above	7.45	.684	84
	below 35 years	8.00	.	1
	Total	7.46	.682	85
Total	35 years and above	7.38	.976	85
	below 35 years	2.60	.922	90
	Total	4.92	2.574	175

b) Teachers' age: Speaking Score

Facilitation	Teachers' Age	Learner mean scores	Std. Deviation	Total number in sample
Play-based	35 years and above	1.00	.	1
	below 35 years	2.17	.505	89
	Total	2.16	.517	90
Formal	35 years and above	2.79	.441	84
	below 35 years	3.00	.	1
	Total	2.79	.439	85
Total	35 years and above	2.76	.479	85
	below 35 years	2.18	.510	90
	Total	2.46	.575	175

c) Teachers' age: Listening Score

Facilitation	Teachers' Age	Learner mean scores	Standard Deviation	Total number in sample
Play-based	35 years and above	.00	.	1
	below 35 years	.37	.509	89
	Total	.37	.507	90
Formal	35 years and above	2.68	.714	84
	below 35 years	3.00	.	1
	Total	2.68	.711	85
Total	35 years and above	2.65	.767	85
	below 35 years	.40	.577	90
	Total	1.49	1.312	175

**Teachers' Experience and Grade R Learners' ELP Scores**

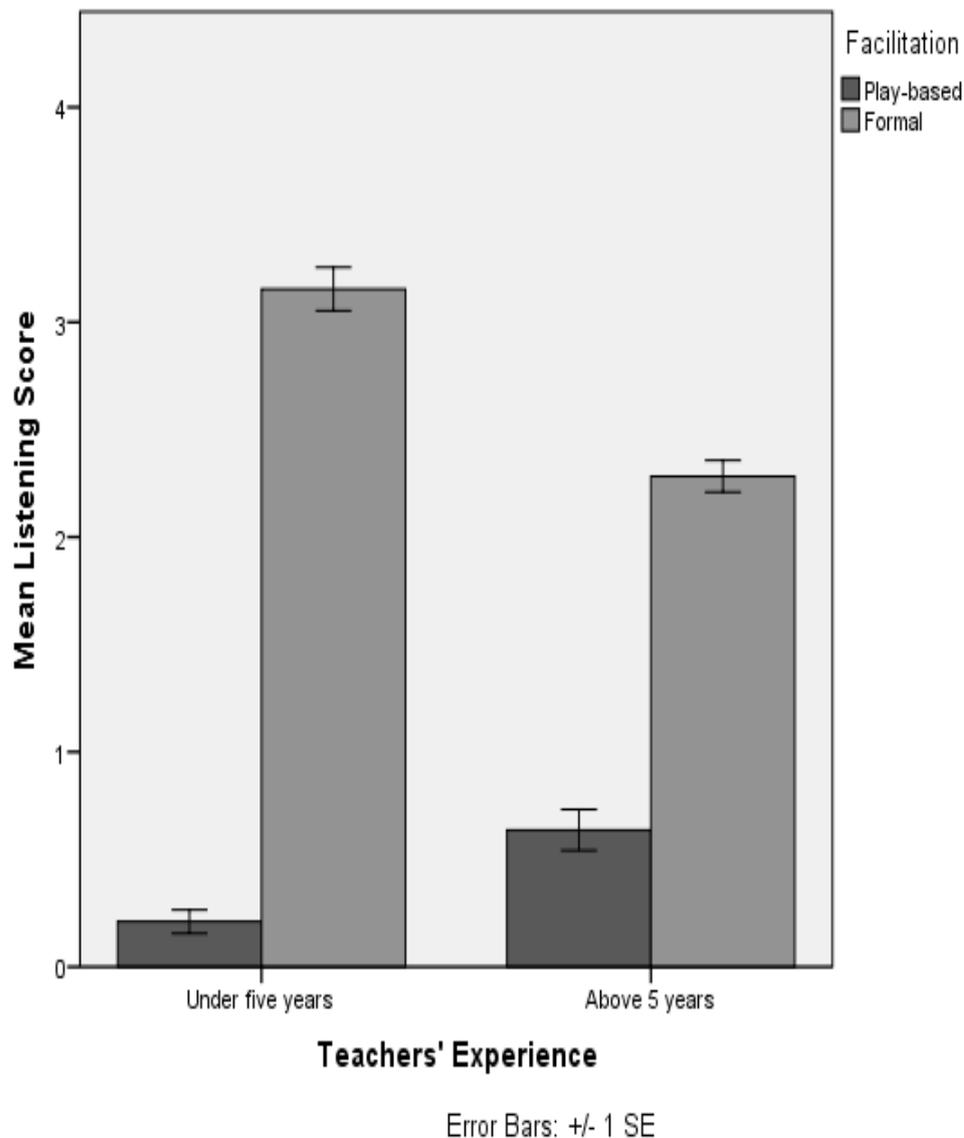
The possible association between teachers' experience and their learners' total, speaking and listening scores was probed. Higher performance scores were obtained for less experienced teachers. A two-way ANOVA was carried out to evaluate if the observed differences between the experience groups were statistically significant. Significantly

higher scores were obtained for listening scores when learners had less experienced teachers. This, however, could not be demonstrated for the listening scores ( $p < 0.05$ ). The two-way ANOVA further demonstrated that this observation is also true for both facilitation methods separately. Less experienced teachers achieved higher learner performance scores in listening for both facilitation

methods (play and formal instruction methods). Figure 6 illustrates this effect graphically.

The results of the two variables, i.e. teachers' age and experience, correspond. It could be

concluded that although younger teachers were less experienced, their learners still performed better on the ELP standards assessment tool.



**Figure 6** Mean listening learner scores according to teachers' experience

### Discussion

#### Associations between Teachers' and Learners' First Languages and Learner Scores

In the current study, learners who had isiNdebele speaking teachers and isiNdebele speaking learners performed systematically better than other first language groupings. One of the possible reasons for better EAL performance in learners could relate to the large number of English loan words present in isiNdebele as compared to other language groupings in Mpumalanga. According to Mahlangu (2014), phonemes – in particular vowels – as well as nouns, verbs, conjunctions, adjectives and

adverbs, have been introduced to the isiNdebele vocabulary by borrowing words from the English language. isiNdebele has many phonemes that are part of the English phonology (Pan South African Language Board (PanSALB, 2005). For example, the English consonant cluster /tr/ is also rendered as /tr/ in isiNdebele. There are only a few isiNdebele phonemes that are not part of English phonology, such as the click phonemes [!] and [//] (PanSALB, 2005). The following examples illustrate how the English consonant cluster has been loaned to isiNdebele.

English	isiNdebele
trigonometry	itrigonomethri
trampoline	itrampolini [itramp'olini]

In the case of borrowed English words, the consonant clusters /sc/, /sl/, /sp/, /sq/, /sch/ and /st/ generally insert a vowel in between the consonants in isiNdebele. The English clusters, for instance, is /sc/ and /sq/ > /sk/, /s.k/ and /s/ while /sl/ > /s...l/, /sp/ > /s...p/, /st/ > /s...t/ are isiNdebele clusters (Mahlangu, 2007). As a result, the isiNdebele lexical stock is laden with English lexical items.

Learners who had teachers with siSwati as their first language were systematically performing the worst in EAL performance scores when compared to other language groups. The possible reasons for poor performance in siSwati may be due to the few words loaned from the English language and the phonemes, verbs, adjectives, nouns and vowels being completely different from English (Mahlangu, 2007). IsiNdebele has more borrowed English words when compared to Sepedi, Xitsonga, isiZulu and siSwati (Mahlangu, 2007).

A further explanation of why children's own first languages affected their scores may be found in the fact that some teachers did not speak the learners' first languages. If learners did not understand English words, some teachers could not explain the words in the learners' first languages. The situation is very different in a country such as the United States of America (US), where most EAL learners are Spanish first language speakers and facilitated by teachers who are bilingual i.e. speaking both English and Spanish (Xu, 2010). If learners do not understand English words, the teacher can code switch and explain the meaning of words in Spanish. Similar findings of success in EAL facilitation when teachers spoke both English and Spanish is reported by Wong-Fillmore (1997) and Xu (2010). As a result of shared word meanings and pronunciation between English and Spanish, teachers who speak both languages have an advantage to facilitate EAL in Spanish speaking learners.

#### Learners' Gender and their EAL Scores

There appears to be variability in the research findings regarding the association between gender and learners' EAL scores. According to Ramsey (2006), girls in New York performed better in EAL assessments when compared to boys, especially in listening competencies, but performed more or less the same in speaking skills. Girls were found to be more attentive, and willing to adhere to instructions, while boys were more playful and easily distracted (Ramsey, 2006). In contrast, Reid (2009) found that boys scored better in speaking competencies as compared to girls, and performed similarly in listening competencies. It appeared that boys spoke confidently and were able to narrate

stories, sing songs, say poems and tell rhymes (Reid, 2009). It may be that some assessment instruments are highly sensitive to small differences, such as differences in EAL language learning between boys and girls. In the current study, there was not a significant difference between boys and girls in learners' EAL performance. There were an almost equal number of boys (88) and girls (87) in the study sample, thereby strengthening the research findings. It may be that the ELP tool is not such a sensitive instrument to identify differences in EAL language learning between boys and girls.

#### Teacher Qualifications

Literature findings attest to the fact that teachers with higher qualifications achieve better EAL learner performance scores when compared to teachers with lower qualifications. Barbara (2008) found that learners with teachers who had postgraduate qualifications, attained higher EAL scores, when compared to teachers with first degrees. Teachers with postgraduate qualifications may be more knowledgeable about facilitation techniques that could be employed in the classroom, and could be better versed in assessment practices in comparison to teachers with initial degrees. Bates (2007) also found that teachers in schools with undergraduate qualifications achieved lower EAL scores, in comparison to teachers with postgraduate qualifications.

Teachers with a Grade 12 certificate in the current study achieved lower performance scores than teachers with an ECD qualification in both the play and formal instruction approach. It should be noted that an ECD qualification is a higher qualification than Grade 12, but it is not a graduate qualification. The Mpumalanga Department of Education used Further Education and Training Colleges to train teachers in Level 4 and Level 5 qualifications on Basic Child Care. The course content in these qualifications placed emphasis on first and second language learning and the various strategies/methods by means of which to promote language learning in the Grade R classroom. It appears that qualifications had a significant association with Grade R learners' EAL skills in this study. The minimum qualifications to be a Grade R teacher is an ECD NQF Level 4 qualification (Department of Basic Education, Republic of South Africa, 2011) in South Africa, while the minimum qualification in most states in the US is an undergraduate degree in ECD (United States Department of Education, 2007).

#### Teachers' Age and Experience

According to Berk (2006), the major variables associated with teachers' success in developing learners' EAL competency are qualifications, teachers' first language and experience. Age

appears not to be a variable determining teachers' success in second language learning in the US. However, in the current study, significantly higher speaking scores, as well as total scores, were obtained when learners had young and less experienced teachers. The teachers in the study sample were better qualified than older Grade R teachers, and were implementing the formal based method.

In this research study, learners of teachers over 35 years of age achieved lower Grade R EAL learner scores than teachers younger than 35 years of age. Younger and more inexperienced teachers had higher ECD qualifications than did older teachers. The Department has trained ECD teachers since 2007 by using the Further Education and Training (FET) Colleges as service providers and paying all tuition fees. The training of new teachers should be seen in the context of increasing Grade R coverage, which encourages schools to accommodate such classes and employ more practitioners for the new classes. In this research study teachers with five or more years of experience achieved lower learner scores than teachers with less than five years of experience. After analysing attendance training registers, it appeared that senior teachers did not attend departmental training sessions regularly. It appears that training of senior teachers in Grade R facilitation practices should be prioritised. Since the research has shown that teacher training was significantly associated with learner performance, this important strategy to increase success in Grade R cannot be ignored.

#### Limitations of the Study

In the first instance, the findings cannot be generalised to urban contexts. Urban schools are well-resourced, with English teaching material and qualified teachers with under- and postgraduate degrees, and are located in relatively affluent areas when compared to rural contexts (EMIS Statistics Report, 2012). Secondly, Grade R teachers employed by community-based centres were not included in the sample, since these centres are not registered with the Mpumalanga Department of Education. The community-based centres are privately owned. Therefore the study results cannot be generalised to private community-based centres.

#### Conclusion and Recommendations

This research study examined which teacher and learner variables affect Grade R EAL acquisition in multilingual rural Mpumalanga schools. The research therefore contributes to a better understanding of contextual variables, which may enhance EAL learning in Grade R. Previously, the focus was on improving educational outcomes when the child was enrolled in Grade 1, since it was the commencement of formal learning. The research highlights the importance of effective

preparation of Grade R learners from multilingual backgrounds, to acquire the particular LoLT of the school. Although the variables contributing to improved EAL learning in children in this study may be specific to the study context, other researchers may be alerted to investigate similar variables of teacher qualifications and age, and the first language of both teachers and learners.

It was found that Grade R teachers with an ECD qualification produced better learner performance scores in both play-based and formal based classrooms. It is proposed that the Mpumalanga Department of Education upgrade Grade R teachers' qualifications so as to ensure that the ECD sector is professionalised. The Department should also consider enrolling teachers for the ECD diploma or the Bachelor of Education Degree with a focus on educational linguistics, in order to further professionalise the sector. The Department of Basic Education should meet with the Department of Higher Education to discuss the inclusion of educational linguistics in pre-serving training at Higher Education Institutions.

Some teachers did not speak the learners' first languages, which could have contributed to low learner EAL performance. These teachers could not explain the words in the learners' first languages, possibly resulting in some learners encountering challenges in EAL proficiency, since they do not understand some English words.

Learners' first language scores appeared to relate to their EAL proficiency. It is recommended that speech-language therapists be appointed in schools to work with Grade R teachers in providing support to learners who are encountering challenges in achieving EAL competency. Since first language acquisition determines additional language learning (Owens, 2012), parents should be informed about the benefits of first language proficiency.

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