

## The effects of educational context on the understanding of linguistic concepts in English and isiZulu by Grade 7 learners

Nicole Morrow, Heila Jordaan and Peter Fridjhon

jordaanh@umthombo.wits.ac.za

The effects were assessed of English instruction on home language (isiZulu) competence in Grade 7 learners from three different contexts (rural, urban, and township), where the exposure to and instruction in English and isiZulu vary considerably. Eight schools including 181 learners participated in the study. The assessment tool, constructed in English and translated into isiZulu, was based on the frequency of occurrence of key concepts in a published curriculum package. The learners showed specific patterns of performance dependent on context. Johannesburg learners performed significantly better in English than in isiZulu, demonstrating the highest level of competence in English but the lowest in isiZulu. Soweto learners showed similar proficiency in both languages, demonstrating the same level of competence in isiZulu but significantly higher English scores than the Kwa-Zulu Natal learners, who did much better in isiZulu than in English. All learners had difficulty on the tasks involving conjunctions, temporal concepts, conditionals and intensifiers, which were assessed using sentence construction or sentence completion tasks, and required higher levels of language processing. The results highlighted the important role of language in learning and academic success. The significant influence of language exposure and context was also illustrated.

### Introduction

Language proficiency is central to academic success and, in 1997, the South African Department of Education clearly stated that learners' ability to cope with the academic curriculum is dependent on competence in the language of learning. The development of cognitive academic language proficiency (CALP), described by Cummins (1988), enables learners to understand and use the decontextualised, formal language register of classroom discourse and text books. This is complicated in a multilingual context such as South Africa where many learners are expected to develop cognitive academic skills in a second or additional language. Although language in education policies has become more liberal, and learners have the right to mother tongue education (Pluddemann, 2001), English tends to dominate in all educational contexts, because it is seen as the language of power and economic advancement (Kapp, 2000). In an attempt to accommodate this strong drive for English, the education department encourages an "additive" approach where both English and home languages are developed for communication and academic purposes. This is based on Cummins' (1988) threshold theory which claims that the cognitive effects of bilingual language acquisition are positive under additive conditions, provided both languages are fully developed. These conditions are rarely met in the education system and Cummins warns that cognitive effects may be negative when a poorly developed L2 replaces the home language and both languages are below expected levels of development (Baker & Hornberger, 2001). Cognitive consequences may be neutral, however, if at least one language is sufficiently developed to be used for academic purposes.

In light of the above and the fact that each of the three educational contexts, currently described in South Africa (Adler, 2001), may have very different implications for the development of cognitive academic language proficiency, this research focused on the extent to which learners are able to acquire CALP in their home language (isiZulu) and in English, the most common second language for the majority of South Africans (Pluddemann, 2001).

The educational contexts identified by Adler (2001) are: 1) Former "Model C" suburban schools (e.g. in Johannesburg), where English is the only language of instruction; the teachers are mostly monolingual English speakers; L1 and L2 English learners are taught in the same classes; there is little or no support for the learners' home languages at school; and the schools are generally well resourced; 2) Township schools (e.g. in Soweto), where both English and home language are used for instruction; teachers are multilingual; there are only L2 English learners in the classes; there is school and community support for both home language and English although the schools may not be as well resourced as the suburban schools; and 3) Rural schools (e.g. in the Kwa-Zulu Natal Midlands), where both English and the learners'

home language are used for instructional purposes, possibly with greater use of home language; teachers are bilingual/multilingual; there are only L2 English learners in classes; the learners have limited access to English outside school; and schools are poorly resourced.

### Methodology

#### Aims

The aims of this study were a) to compile a language measure to assess learners' understanding of key concepts in the academic curriculum covering the two OBE learning areas of 1) Language, Literacy & Communication, and 2) Mathematical Literacy, Mathematics & Mathematical Sciences; and b) to assess the learners' understanding of the key concepts in both English and isiZulu in order to compare their language competence across the two languages.

#### Research design

A comparative design utilizing both within group and between group comparisons was employed in this study (Rosenthal & Rosnow, 1991). Three groups were compared to each other on two dependent variables, namely, the isiZulu and English test scores. In addition, the isiZulu and English scores were compared within each of the three groups of learners.

#### Participants

The participants were Grade 7 second language English speakers, with isiZulu, the most commonly spoken official language in South Africa (Pluddemann, 2001) as a predominant first language. Information about the home language of the learners was obtained from the class teachers and then confirmed with those learners who were selected. Grade 7 learners were selected as it was necessary to ensure that all participants had had sufficient exposure to the academic curriculum in English. Grade 7 represents an important stage in the development of cognitive academic language proficiency, and as 5–7 years are needed to develop CALP in a L2, these learners would have had sufficient exposure to both the academic content and to English.

The participants had no obvious or reported form of speech, language or hearing impairment, and no record of school failure. This ensured that results obtained referred to language proficiency and not language impairment or learning disability. Information regarding language abilities was obtained through teacher reports and from academic records.

Participants were selected from eight schools in three geographical contexts (Johannesburg, Soweto and Kwa-Zulu Natal) representing the three educational contexts currently identified in South Africa (Adler, 2001). The sample consisted of 181 learners, whose age ranged from 11 to 15 years.

### Description of learning contexts

The schools varied in socioeconomic status and included a representative sample of the population of Grade 7 learners. A total of 40 learners (mean age of 12 years) were selected from three schools in Johannesburg. These learners came from a variety of residential areas, including: Hillbrow; Braamfontein; Joubert Park; Soweto; Alexandra; Tembisa; Vosloorus; Berea; Yeoville; Parkview; Parktown; Rosebank; and Midrand. There were many languages represented in these schools, for example: English; Afrikaans; Northern Sotho; Sesotho; isiZulu, Tswana; isiXhosa; Venda; Tsonga; SiSwati; Shangaan; Igbo; French; German; and Croatian. The teachers were predominantly monolingual English speakers. The language of instruction in all these schools was English from Grade 0 or Grade 1, and in one school isiZulu was taught as a subject from Grade 3. The schools were all well resourced with respect to English materials.

A total of 89 learners (mean age of 12 years) were selected from two schools in Soweto. Learners came from a variety of residential areas, including Diepkloof and a number of areas surrounding Soweto. There was a limited number of languages represented in these schools, including: Sesotho; isiZulu and English. The teachers were predominantly first language isiZulu speakers. The languages of instruction were English and isiZulu from Grade 2. The schools had access to English resources but few resources for isiZulu.

A total of 52 learners (mean age of 13 years) were selected from three schools in Kwa-Zulu Natal. The learners came from a variety of residential areas, including: Mooi River; Rosetta; Nottingham Road; Balgowan; Lions River; Fort Nottingham; and Howick. They spoke only isiZulu and English. The teachers were first language isiZulu speakers. The language of instruction was isiZulu from Grade 1, with a switch to English at Grades 2, 5, or 6, depending on the school. The schools were generally not well resourced with respect to either English or isiZulu materials.

### Procedure

#### *Compilation of the Assessment Battery*

Concepts represented by key words occurring most frequently in the Language, Literacy and Communication, as well as the Mathematical Literacy, Mathematics and Mathematical Sciences, learning areas were selected from a published Grade 7 curriculum. These two learning areas are seen as vital for academic success. Language, literacy and communication skills form the basis of all other learning areas, as well as the learning process itself (Bengis, 2001). The Mathematical Literacy, Mathematics and Mathematical Sciences learning area was also considered since a number of studies have demonstrated that a learner's command of language plays a vital role in mathematical performance (Souviney, 1983; Adetula, 1990; Sentson, 1994).

The key words were grouped according to the following linguistic categories: interrogatives; conditionals; quantitative concepts; intensifiers; numerical concepts; negatives; conjunctions; and temporal; spatial and mathematical concepts. The five most frequently occurring concepts were identified in each group, and formed the content of the assessment tool. To ensure that the concepts and assessment tasks corresponded to those used regularly in the classroom and were therefore ecologically valid, a curriculum-based, criterion-referenced assessment tool was developed (Oller, 1979; Frederickson & Cline, 1996).

Table 1 contains the key words assessed within each section of the assessment battery, as well as the task used to assess each linguistic category.

The assessment tool was translated into isiZulu. Translation was carried out by a professional translator, as well as an isiZulu speaking speech-language therapist. Two translations were completed in order to obtain inter-translator reliability (Anastasi, 1988). A professional translator translated the assessment tool from English into isiZulu. The second translator then completed a back translation. Inappropriate

items, such as words with no equivalent isiZulu translation or multiple meanings in isiZulu, were deleted from the test.

The assessment tool was piloted to test feasibility, adequacy and appropriateness of the content. Participants for the pilot study complied with the selection criteria and were randomly selected from the Grade 7 classes at the schools participating in the research project. These learners were not included in the main study. A number of grade seven teachers were also consulted in order to ensure that the assessment materials and tasks were representative of those used in the classroom.

#### *Test administration*

The tests were administered by L1 English or L1 isiZulu speakers. The testers were familiar with the classroom situation as well as the nature of language testing. Testers were: a qualified speech therapist, two speech therapy students, and a teacher. The L1 English speakers administered the English assessment and the L1 isiZulu speakers administered the isiZulu assessment. Each tester was trained by the researcher on the test protocol. The assessment took a maximum of one hour to complete. At each school, the selected Grade 7 learners were assessed as a group. Each learner was given a test booklet in which to write responses. In order to ensure that the learners understood the test well and to clarify any words that may have been incorrectly read, each question was read aloud by the test administrator. The tester did not provide any clues/hints or explanations to the learners, as this would influence the test outcome. During all assessments, an audio recording of the classroom environment was completed in order to ensure that no verbal hints or clues were given. Section one of the test was completed last as it was a comprehension task and it was felt that the learners needed to complete the task in their own time. The learners were given a few minutes after the completion of the entire test to check their paper and to complete answers that had been left out. In order to reduce the effect that testing in one language may have had on the results of the other language test, half the group in each school were assessed in English first, and the other half in isiZulu. At the next test sitting, the learners completed the assessment in the previously unassessed language. There was approximately one week between the testing in each language. Any learning effects, which may have occurred as a result of this short time interval, were minimized since no feedback was given to the learners regarding their test results.

#### *Scoring*

The tests were scored by two English and two isiZulu speakers with the assistance of a marking protocol, provided by the researchers. Scores were allocated for evidence of understanding of the concepts as well as for grammatical correctness, where appropriate. In sections 3, 5, 6, 9, and 10 scores were allocated for a correct single word (e.g. true/false) or graphic response. The total score obtained by each learner was calculated for each section, as well as for the total test (out of 75). Raw scores were converted to percentages for ease of comparison. In order to assess inter-marker reliability, a random selection of 90 assessments per language were marked by two independent markers (Howell, 1997). Pearson correlation co-efficients were calculated (Anastasi, 1988) and all correlations were found to be highly positive and significant as reflected in Table 2, confirming that the marking of the tests was reliable (Rosenthal & Rosnow, 1991; Howell, 1995).

The inter-marker correlation co-efficients were higher and more consistent on the English test than on the isiZulu test, where variability across sections was noted. The inconsistency seen in the isiZulu markers may have been due to the different varieties of isiZulu spoken in the different geographical regions. The isiZulu spoken in Soweto and Johannesburg is less formal than that spoken in Kwa-Zulu Natal. There are a variety of words or phrases that are used to express similar meanings and these are dependent on the speaker's knowledge. Variability in African languages has been noted by authors such as

**Table 1** Assessment Battery: Key words and assessment tasks within each conceptual category

Section	Key words					Assessment task
1. Interrogatives	How	How many	Which	Why	What	Comprehension test
2. Conditionals	Although	If	Whether	However	Would	Sentence completion (e.g. He could not decide <i>whether</i> ____.)
3. Quantitative	All	More	Many	Some	Most	Following instructions (e.g. Draw a circle around <i>all</i> the red arrows.)
4. Intensifiers	Even	So	Too	Very		Sentence construction (e.g. Write a sentence using the word <i>so</i> .)
5. Numerical	First	Second	Half	Pair	Third	Following instructions (e.g. Draw a circle round the <i>first</i> heart.)
6. Negatives	Never	No	Not	Un-	Without	True or false (e.g. Farmers never work hard.)
7. Conjunctions	Because	Either (... or)	But	And	Therefore	Sentence completion (e.g. He is sad <i>because</i> ____.)
8. Temporal	After	Always	Before	Now	When	Sentence construction (e.g. Write a sentence using the word <i>now</i> .)
9. Spatial	Below	Between	Inside	Following	From	Following instructions (e.g. Draw a line <i>below</i> a square.)
10. Mathematical	Determine	Between	Opposite	Nearest	Compare	Following instructions (e.g. Measure the distance <i>between</i> the dog and the cat.)

**Table 2** Pearson correlation coefficients showing inter-marker reliability

	English Markers 1 and 2	isiZulu Markers 1 and 2
Section 1	0.87	0.69
Section 2	0.85	0.61
Section 3	0.82	0.80
Section 4	0.72	0.72
Section 5	0.88	0.78
Section 6	0.97	0.95
Section 7	0.88	0.61
Section 8	0.79	0.72
Section 9	0.95	0.88
Section 10	0.79	0.72
Total	0.94	0.85

( $p < 0.0001$ )

Pluddemann (2001), who describes differences between the use of 'deep' or rural standard varieties in comparison to the urban variety.

## Results and discussion

The results obtained by each group of learners on each section, as well as on the total test are reflected in Table 3.

### Educational context effects on isiZulu and English tests

On the English test, the Johannesburg learners obtained high mean scores on all sections. Their overall mean score on the English test was 89.5%. The Soweto learners' overall mean score was 71.43%, with the mean scores varying from 43.1% to 97.7% on different sections of the test. The KZN learners did poorly in the English test, obtaining an overall mean score of only 53.4%. They obtained a mean score below 50% on four sections of the test. Analysis of the isiZulu test results revealed a completely different pattern. The JHB learners obtained the lowest overall mean score (58.1%), whilst the KZN and Soweto learners obtained 73.5% and 75.1%, respectively.

Statistical analysis of the data revealed the following:

On the English test, the Wilk's Lambda statistic revealed a highly significant context effect on the test as a whole ( $F = 11.21$ ,  $df = 20$ ,  $p < 0.0001$ ) and an analysis of variance showed that the context effect was significant throughout all sections of the test, except for section 5 (numerical concepts).

On the isiZulu test, the Wilk's Lambda statistic revealed a signi-

ficant context effect on the test as a whole ( $F = 5.78$ ,  $df = 20$ ,  $p < 0.0001$ ). Analysis of variance showed that the context effect was significant on all sections except sections 3 and 10. Although the scores were significant, they were not as highly significant as the English test.

A Tukey's Honestly Significant Difference Test was used to locate the significant differences between the groups on each section of the test. The results confirmed that the Johannesburg learners performed significantly better than the Soweto learners on 6 out of 10 sections (60%) of the English test, as well as on the overall test score. There were no significant differences between the JHB and Soweto learners on sections 3, 5, 6, and 10, all of which assess numerical/mathematical concepts. The JHB learners performed significantly better than the KZN learners on the overall test score and on all but one section (section 5) of the test. The Soweto learners perform significantly better than the KZN learners on 80% of the English test and on the overall test score.

On the isiZulu test, the Soweto learners obtained significantly higher scores than the JHB learners on 7 out of 10 (70%) sections, as well as on the overall test. There were no significant differences between the JHB and Soweto learners on sections 3, 9, and 10. These were tests of quantitative, spatial, and mathematical concepts. The KZN learners obtained significantly higher scores than the JHB learners on 6 out of 10 sections, as well as on the overall score. The differences between the scores obtained by the Soweto and KZN learners were generally not significant on the Zulu test, except on Section 5 (numerical concepts), where the Soweto learners performed significantly better than the KZN learners.

As is evident from Table 3, the mean scores obtained on most sections of both the isiZulu and English tests reflect a very wide range of scores. Learners in all three groups therefore differed greatly in the scores they obtained, with some scoring 0% whilst others obtained 100% on the same test. The only exceptions to this were the relatively small ranges seen in some of the English test results of the JHB learners, suggesting more consistent performance by this group, in English.

### Comparison between English and isiZulu results in each group

A paired-sample *t* test was used to assess the significance of the differences between the isiZulu and English scores obtained by learners within each group. This analysis was intended to establish the relative proficiency in English and isiZulu in each of the learner groups. The Johannesburg learners scored significantly better in English on all the

**Table 3** English and isiZulu mean scores (percentages) and minimum and maximum scores (percentages) for individual sections and total test

Context		Johannesburg		Soweto		Kwa-Zulu Natal		
Sample size		N = 40		N = 89		N = 52		
Section		English	isiZulu	English	isiZulu	English	isiZulu	Task
1. Interrogatives:	×	87.0	68.1	77.5	77.3	56.4	74.2	Comprehension
	Range	50–100	25–100	12–100	12–100	0–100	25–100	
2. Conditionals:	×	89.7	37.2	60.0	55.9	37.5	62.6	Sentence completion
	Range	40–100	0–90	0–100	10–100	0–100	30–100	
3. Quantitative:	×	97.0	67.4	93.4	71.0	76.1	69.2	Following instructions
	Range	80–100	40–100	0–100	20–100	20–100	20–100	
4. Intensifiers:	×	76.6	44.4	43.1	65.0	34.1	64.9	Sentence construction
	Range	11–100	0–100	0–100	0–100	0–100	11–100	
5. Numerical:	×	97.0	65.0	97.7	86.0	95.3	71.1	Following instructions
	Range	0–100	0–80	60–100	40–100	40–100	20–80	
6. Negatives:	×	98.0	80.5	91.4	91.6	73.0	87.3	True or false
	Range	80–100	40–100	0–100	60–100	0–100	60–100	
7. Conjunctions:	×	91.2	55.5	70.4	71.5	41.1	72.6	Sentence completion
	Range	40–100	0–100	20–100	20–100	0–90	30–100	
8. Temporal:	×	84.6	50.8	60.0	80.2	42.1	73.8	Sentence construction
	Range	40–100	0–100	0–100	20–100	6–100	20–100	
9. Spatial:	×	96.8	81.2	87.3	88.4	69.2	95.1	Following instructions
	Range	50–100	0–100	0–100	25–100	0–100	25–100	
10. Mathematics:	×	98.7	83.1	95.2	89.6	82.2	88.7	Following instructions
	Range	75–100	50–100	50–100	50–100	50–100	50–100	
11. Total	×	89.5	58.1	71.43	75.1	53.4	73.5	
	Range	68–100	24–88	17–93	42–94	16–86	46–90	

sections. In Soweto, the learners scored significantly higher in English on sections 3 (quantitatives), 5 (numerical), and 10 (mathematical), with no significant differences between isiZulu and English scores on section 1 (interrogatives), 2 (conditionals), 6 (negatives), 7 (conjunctions), and 9 (spatial concepts). The Soweto learners scored significantly higher in isiZulu on sections 4 (intensifiers), 8 (temporal concepts), and the total score. In Kwa-Zulu Natal, the learners scored significantly higher in isiZulu on sections 1, 2, 4, 6, 7, 8, 9, 10, and the total score. They scored significantly better in English on sections 3 and 5, which assessed quantitatives and numerical concepts, respectively.

#### Analysis of the results on the individual sections of the test

Figures 1 and 2 show the distribution of mean scores obtained by each group of learners on each section of the English and isiZulu tests, respectively.

In the English tests, the learners in Soweto and KZN demonstrated the same performance pattern. They had a better understanding of numerical (section 5), mathematical (section 10), quantitative (section 3), negative (section 6), spatial (section 9), and interrogative concepts (section 1). They had difficulty with the conjunctions (section 7), temporal concepts (section 8), conditionals (section 2), and intensifiers (section 4). The tasks that they had most difficulty with were those that involved sentence construction and completion (sections 2, 4, 7, and 8). The JHB learners did not show this pattern. They scored above 80% on all sections of the test, although their scores on sections 4 and 7 were also lower than their other scores. The JHB learners had the same pattern of difficulty with the isiZulu test as the Soweto and KZN learners had with the English test, confirming that sections 2, 4, 7, and

8, which required sentence construction or sentence completion, were the most difficult for learners with limited proficiency in any particular language.

A descriptive analysis was conducted to clarify whether this was due to conceptual difficulty or the nature of the task. Table 4 shows the number of grammatical errors (GE) and semantic errors (SE) made by each group of learners on each section tested in English and isiZulu.

In JHB, the learners made more grammatical errors than semantic errors for both the English and isiZulu tasks. The learners thus had more difficulty when expected to construct isiZulu sentences making more grammatical errors in isiZulu than in English. Both the Soweto and KZN learners made more grammatical errors than semantic errors in both English and isiZulu. This showed that even though semantic errors were present, suggesting some conceptual difficulties, the majority of learners made more grammatical errors. This would suggest difficulty with the actual task of formulating written responses.

#### General discussion

The tasks and key words assessed in this study occur regularly and consistently in the curriculum and learners can be expected to cope with them from approximately Grade 5. The learners should therefore have obtained close to 100% on the tests in order to demonstrate proficiency and competence in either the L1 or L2. Instead, the learners showed specific patterns of performance dependent on their educational context.

Johannesburg learners did well in English but not in isiZulu. According to Bialystok (2001), these learners display sufficient development in English to be able to function in the academic environment,

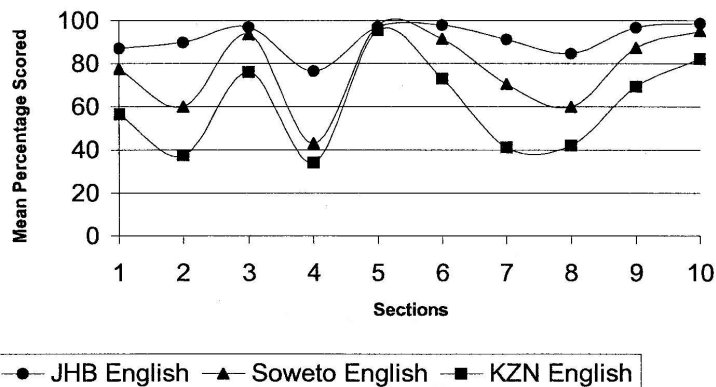


Figure 1 Mean percentage score in each section of the English test

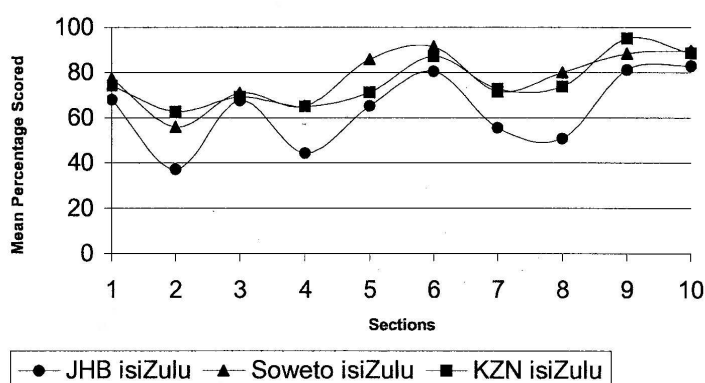


Figure 2 Mean percentage score on each section of the isiZulu test

**Table 4** Total number of grammatical errors (GE) and semantic errors (SE) in sentence completion and sentence construction tests

Section	Region	Johannesburg		Soweto		Kwa-Zulu Natal		Question type
		English	isiZulu	English	isiZulu	English	isiZulu	
2. Conditionals:	GE	35	98	155	67	173	54	Sentence completion
	SE	9	48	60	68	75	19	
4. Intensifiers:	GE	21	70	85	43	95	30	Sentence construction
	SE	4	15	24	17	17	6	
7. Conjunctions:	GE	35	96	172	84	179	44	Sentence completion
	SE	10	32	33	51	71	24	
8. Temporal:	GE	27	115	175	60	186	46	Sentence construction
	SE	2	23	13	6	13	8	

provided only English is used. A major disadvantage for these learners however is the loss of the home language as a language of learning and higher order thought. It should perhaps be recommended that they are given the opportunity to learn their home language through the introduction of isiZulu as a subject or through informal home language enrichment classes. According to Cummins (1988:139):

Educators who see their role as adding a second language and cultural affiliation to students' repertoire are likely to empower students more than those who see their role as replacing or subtracting students' primary language and culture in the process of assimilating them to the dominant culture.

The learners in Soweto showed a different pattern, reflecting similar proficiency in both English and isiZulu, with mean total scores of 71% and 75%, respectively. These learners are educated in an environment where there is similar exposure to English and isiZulu, resulting in

'additive' bilingualism. The schools have made an attempt to use both languages effectively in education. A possible problem in this context is the learners' relatively lower competence (in comparison to the English scores of the Johannesburg learners) in both English and isiZulu (71% and 75%). According to Bialystok (2001), a lack of competence in both languages can lead to a detrimental effect on academic performance as the learner has no adequate language in which to establish the cognitive processes that are the basis of academic learning. Bialystok (2001) claims that it is not the balance between the languages that is important, but rather the need for one language to be developed to a level that is sufficient for schooling. The Soweto learners may therefore be at a disadvantage academically, despite balanced proficiency in their L1 and L2. The reason for this may be that it takes longer to acquire academic proficiency in both languages within an 'additive' context. This conclusion is supported by the finding that the Soweto

learners did as well as the JHB learners on many sections of the test, and only performed poorly on the sections requiring deeper levels of language processing (sections 1, 2, 4, 7, and 8).

The learners in KZN showed the opposite pattern to the JHB learners. Their isiZulu performance was significantly better than their English performance, which clearly demonstrates a lack of sufficient proficiency to cope with the academic curriculum in English. According to Bialystok (2001), education in a weaker language will lead to the learner having limited competence in school and may have a negative effect on cognition. Another factor that needs to be considered is the large number of learners in the classes, general lack of resources, and the consequent poorer quality of education in this context. These learners would benefit from home language education throughout their schooling while learning English as an additional subject. It would seem that English instruction is counterproductive in this context at this stage.

The age ranges, gender differences, different settings, and competence of teachers all lead to context effects that may have impacted on the results of the study and should be taken into account. A limitation of the study is that a large sample was used, preventing an in-depth analysis of results. It was not always possible to distinguish whether the learners' performance was affected by the nature of the task or the concept being tested. Further item analysis could be performed across the various concepts being assessed as there may have been overlap on some sections of the test.

## Conclusion

Findings of this study confirm the complex relationship between dual language acquisition and the education system in South Africa. This is evident in the continued focus on English instruction to the detriment of the home language; the poor socioeconomic conditions and under-resourcing of a number of schools; and the adherence to old approaches to language in education (e.g. in Kwa-Zulu Natal), where mother tongue instruction in the first three to four years of education, is followed by a rapid, unsupported shift to English, leading to a devaluation of the importance of a learners' home language (Arkhurst, 1997). The drive for English thus appears to hamper the implementation of mother tongue education. Even when parents have been given the opportunity to choose the language of instruction, they tend to choose English (Kapp, 2000). According to data obtained by Kapp (2000), learners feel that it is impossible to communicate in the public environment outside the townships and rural areas without the use of proficient English. Misconceptions about the nature of language learning, however, have led to the belief that English instruction will benefit the learners educationally and economically. In reality, high levels of proficiency can also be achieved through instruction in English as a second language. In addition, the use of the other official languages in this country by officials and high profile public figures may contribute to changing this belief.

According to Marinova-Todd, Marshall and Snow (2000), studies have shown that L1 instruction is more important than L2 instruction for ultimate literacy and academic achievement in the L2, and learners should be provided with a strong basis in the L1. Home language maintenance needs to be taken more seriously as a way of developing the cognitive academic language proficiency of learners in the South African context. The aim of all education should be to foster bi- and multi-lingualism at all levels of language usage.

## Acknowledgements

This article is dedicated to the memory of the late Susan H. Suzman, with gratitude for her dedication, support and guidance for the isiZulu portion of the study. PANSALB is thanked for funding the study. NM thanks her family for their support and her husband, John, for his encouragement and valuable comments. All the learners that participated in the study and made it possible are thanked.

## References

- Adetula LO 1990. Language Factor: Does it Affect Children's Performance on Word Problems? *Educational Studies in Mathematics*, 21:351-365.
- Adler J 2001. *Teaching Mathematics in Multilingual Classrooms*. Dordrecht, The Netherlands: Kluwer Academic Publishers.
- Anastasi A 1988. *Psychological Testing*. Englewood Cliffs, NJ: Macmillan Publishing Company.
- Arkhurst J 1997. Challenges to teachers as schools in South Africa become more integrated: An anti-racist perspective on current practices. *Journal of Education*, 22:5-18.
- Baker C & Homberger NH 2001. *An introductory reader to the writings of Jim Cummins*. UK: Multilingual Matters Ltd.
- Bengis PC 2001. An Investigation into the language demands of the Grade 7 curriculum with respect to learners whose first language is not English. Report on a Masters research project presented to the Department of Speech Pathology and Audiology, University of the Witwatersrand (Unpublished).
- Bialystok E 2001. *Bilingualism in Development: Language, Literacy & Cognition*. UK: Cambridge University Press.
- Cummins J 1988. From Multicultural to Anti-Racist Education: An Analysis of Programmes and Policies in Ontario. In: Skutnabb-Kangas T & Cummins J (eds). *Minority Education: From Shame to Struggle*. Clevedon, UK: Multilingual Matters Ltd.
- Department of Education 1997. *Foundation Phase (Grades R to 3) Learning Programmes: Literacy, Numeracy, Life Skills*. Pretoria: Department of Education.
- Frederickson N & Cline T 1996. The Development of a Model of Curriculum Related Assessment. In: Cline T & Frederickson N (eds). *Curriculum Related Assessment, Cummins and Bilingual Children*. Clevedon, UK: Multilingual Matters Ltd.
- Howell DC 1995. *Fundamental Statistics for the Behavioural Sciences*. 3rd edn. Belmont, CA: Duxbury Press.
- Howell DC 1997. *Statistical Methods for Psychology*. 4th edn. USA: Duxbury Press.
- Kapp R 2000. 'With English You Can Go Everywhere' An Analysis of the Role and Status of English at a Former DET School. *Journal of Education*, 25:227-259.
- Marinova-Todd SH, Marshall DB & Snow CE 2000. Three Misconceptions About Age and L2 Learning. *TESOL Quarterly*, 34:9-31.
- Oller JW 1979. *Language Tests at School: A Pragmatic Approach*. London: Longman Group Ltd.
- Pluddemann P 2001. Education with Multilingualism in South Africa: An Overview. In: Ridge E, Makoni S & Ridge SGM (eds). *Freedom and Discipline: Essays in Applied Linguistics from Southern Africa*. New Delhi, India: Bahri Publications.
- Rosenthal R & Rosnow RL 1991. *Essentials of Behavioural Research: Methods and Data Analysis*. 2nd edn. New York, NY: McGraw-Hill.
- Sentson C 1994. The Effect of Language Presentation on Pupil's Performance in a Mathematical Test. *South African Journal of Education*, 14:109-115.
- Souviney RJ 1983. Mathematical Achievement, Language and Cognitive Development: Classroom Practices in Papua New Guinea. *Educational Studies in Mathematics*, 14:183-212.

**Heila Jordaan** is Senior Lecturer and Head of Discipline in Speech Pathology and Audiology at the University of the Witwatersrand. Her research focus is on multilingualism and communication disorders and multilingualism and education and she has published widely in these fields. She is a committee member of the International Association for Logopedics and Phoniatrics.

**Nicole Morrow** (Waner) has a Masters degree in Speech and Hearing and is a Speech-Language Therapist/Audiologist at a learning-disabled school. She has three years experience as a clinical tutor in Speech Therapy. Her interests include multilingualism, early intervention, and neurodevelopmental therapy.

**Peter Fridjohn** is Senior Lecturer in the School of Statistics and Actuarial Sciences at the University of the Witwatersrand. His research and teaching interests include applied statistics, research design, and the metrics applicable to the social sciences, mathematics and statistical education.