

An aspect of language for academic purposes in secondary education: complex sentence comprehension by learners in an integrated Gauteng school

Danielle van Rooyen and Heila Jordaan

Heila.Jordaan@wits.ac.za

Language for academic purposes is an important concept, not always recognised and developed within the education system. The ability to use language for learning can be difficult for individuals who are educated in a second language. They are required to master complex concepts in a language they are still acquiring. We aimed to discover how secondary school learners performed on an aspect of academic language: complex sentence comprehension. A group of 464 adolescent participants' performance on the grammatical understanding subtest of the Test of Adolescent Language was analysed in relation to their status as first or second language English learners, their grade, gender, literacy experiences, preferred modality of learning, and other factors deemed to influence language acquisition in modern society. The results indicated that the majority of learners achieved within the average range. There were significant differences between the male and female participants and the junior phase ESL males achieved the lowest scores. It was concluded that it may take 8–9 years of formal schooling for some individuals to acquire the requisite academic language proficiency, particularly if they are learning in their second language. This has important implications for the teaching and assessment of second language learners.

Keywords: academic language; complex sentence understanding; second language learners; secondary education

Introduction

Language competence and proficiency are central to educational success (Bashir, Conte & Heerde, 1998; Owens, 2004; Hoff, 2005). However, this involves more than the ability to communicate in everyday conversational contexts, but is specifically related to the use of language for academic purposes. As Westby (1994:341) aptly states: "In the pre-school years, children learn to talk but as they move into school they talk to learn. In academic tasks, language is used in the service of thought". Language for academic purposes requires the understanding and use of classroom discourse which includes the educator's verbal instructions and lessons, as well as written text. The academic language register therefore encompasses *both oral and written modes of communication* (Cummins, 2000). Importantly, it develops as a result of exposure to formal education. This implies that educators facilitate this development through the use of appropriate teaching strategies, focusing on the linguistic aspects implicit in the subject matter of various learning areas. Explicit language teaching is now included as an aim of the outcomes-based curriculum. However, there is evidence to suggest that teachers in

South Africa are unaware of their responsibility to meet the language related needs of learners and also lack the training of specific methodological skills to promote effective learning of academic language (Uys, Van der Walt, Van den Berg & Botha, 2007).

One aspect of language for academic purposes is the understanding of syntactically complex sentences. These are defined as containing a main clause and at least one subordinate clause (Owens, 2008). The comprehension of such sentences is a skill that develops from exposure to literacy and increasingly complex subject material as learners progress through the intermediate and secondary stages of education (Owens, 2008; Hoff, 2005; Westby, 2004). It enables learners to understand the language of text books and lessons which contain multiple embeddings and referential and logical connections across clausal boundaries (Nelson, 1993). These linguistic demands become more challenging through the grades requiring processing of decontextualised language which is devoid of contextual and interpersonal cues, such as gesture, facial expressions and intonation (Cummins, 2000; Snow, Cancino, De Temple & Schley, 1991).

The South African context poses a challenge to the development of language for academic purposes when learners must accomplish this in a second language. As a result of the political history and unique sociolinguistic forces operating within the country and by extension in education, the second language is almost always English (Ntshingila, 2006; De Klerk, 2002; De Wet, 2002; Braam, 2004). There is evidence to suggest that the different contexts of education that have evolved in the post-apartheid era, may be variably effective in developing the language competence required for academic purposes, in either the first or second language (Morrow, Jordaan & Fridjohn, 2005; Adler, 2001). There is also general concern regarding the literacy levels and educational attainment of learners in South African schools (Lewis, 2004; Tyobeka, 2006) and since reading and writing are language based activities (Bashir, Conte & Heerde, 1998), the logical assumption is that many learners may not have achieved the language competence required for academic purposes. In this regard, there are those (Alexander, 1999; Heugh, 2000) who argue that until learners are instructed in their home language, the Grade 12 pass rate will not improve significantly. This is also the motivation behind the Minister of Education's recent announcement that learners should receive mother tongue instruction for the first six years of schooling (Pandor, 2006). Internationally (Genesee, Paradis & Crago, 2004), and also in South Africa (e.g. Malherbe, 1978; Ianco-Worrall, 1972; MacDonald, 1990) there is strong research evidence to suggest that learners develop academic language proficiency more effectively in their home language or, alternatively, in bilingual education, where instruction is provided in both the first and second languages. There are however many South African schools in which children, either by choice or by circumstance, are learning in only English, their second language, from Grade 1 (Adler, 2001). Particularly in Gauteng province, where there is marked heterogeneity in the language backgrounds of learners, and

teachers and learners do not speak the same home languages, English is adopted as the language of teaching and learning (LoLT). In former Model C urban suburban schools, for example, first and second language English learners are integrated and instructed by educators who teach in English. (Adler, 2001). Clearly these learners must develop academic language proficiency in their second language, with little or no support in the home language. There is limited research addressing the extent to which these learners achieve the language competence required to meet the demands of the curriculum. Two available studies (Jooste, 2003; Irving, 2005) suggest that by the fifth and seventh grades, respectively, English second language learners are performing significantly below their peers on measures of reading comprehension, confirming the generally held belief that it takes longer to acquire language for academic purposes in the second language (Cummins, 2000:58). The problem is that adequate conversational skills are often assumed to reflect proficiency in academic language and it is therefore important to differentiate these two levels of language competence, using appropriate measures.

Our purpose was to investigate the participants' comprehension of complex sentence structures in relation to their status as first or second language English learners, their grade, gender, literacy experiences, and preferred modality of learning as well as other factors deemed to influence language acquisition in modern society, such as the amount of time spent playing video or computer games, amount of time spent watching television, and the number of short message texts (SMSs) sent per day. Watching television and playing computer games may reflect a changing preference for visual as opposed to auditory stimulation amongst children and it was postulated that individuals who watch more television or play more video and/or computer games may spend less time reading. This would affect language development particularly in terms of complex sentence structure (Owens, 2008; Hoff, 2005; Westby, 2004).

In addition, the participants' complex sentence comprehension abilities were correlated to their most recent summative English mark and their most recent average school report mark. This was done to determine whether complex sentence comprehension, as assessed in this study, was related to school performance.

The Listening Grammar subtest of the Test of Adolescent Language (TOAL) (Hammill, Brown, Larsen & Wiederholt, 1980) was used to assess the learners' understanding of complex sentence structures. Although it was published some time ago, the TOAL is one of very few validated measures available for the assessment of language in the secondary school adolescent population and it was specifically designed to serve as a research instrument (Hammill *et al.*, 1994). Language is a complex, multidimensional construct (Owens, 2008) and language assessment procedures are constructed in accordance with a particular theoretical model of language. The TOAL is based on a psycholinguistic model of language in which the different components (syntax and semantics) and processes (understanding and production) are

viewed as discreet entities and therefore assessed separately (Bloom & Lahey, 1978). This enables researchers to use subtests to study specific aspects of language and clinicians are able to identify specific areas of strength and weakness in different children. Although the test was standardized on an American population, the particular subtest, used in this study, assesses comprehension of sentence structures that would be required to cope with the linguistic demands of any English classroom in South Africa or globally. The Listening/Grammar subtest was selected from four possible formats, and the format ultimately used was selected because the authors reported that it had high reliability (Hammill *et al.*, 1980). The sentences in the subtest are highly subordinated, even though they are not exceptionally long (Scott & Stokes, 1995). They require knowledge of a broad range of forms that characterise higher level academic discourse (Scott & Stokes, 1995). The sentences are primarily grammar-based as the vocabulary is controlled (Hammill *et al.*, 1980). An example, as provided by Hammill *et al.* (1980) is the following:

- A.) Ask Jack to bring it here.
- B.) Tell Jack to bring it here.
- C.) Ask Jack what to bring here.

Learners are then required to select the two sentences that have the same meaning.

Method

Aims in the study

Our aims in this study were

- (a) to explore the complex sentence comprehension abilities in different groups of adolescents within a specific South African secondary school context. Comparisons were made between first- and second-language English-speaking participants; male and female participants; and junior and senior phase participants;
- (b) to examine the complex sentence comprehension results in relation to other variables including literacy experiences, e.g. the amount of time spent on recreational reading as well as reading for school; amount of time spent playing video/computer games; amount of time spent watching television; number of SMSs sent per day; most recent summative English mark; most recent school report average; and preferred learning style; and
- (c) to assess the effects of language status, grade and gender on each of the variables mentioned in (b).

Research design

We adopted a quantitative cross-sectional group research design, as various different groups were studied, based on one or more variables, at roughly the same point in time (Welman & Kruger, 2001).

Participants

A sample of 464 adolescents, between the ages of 13 and 19 years, participated in the study. The school they attend uses English as its medium of instruction, and was previously a Model C school. The learners attending the school come from diverse backgrounds and, although participants were divided into first- and second-language English speakers, they differed greatly in terms of home cultures and first-language backgrounds, which included the following: Afrikaans, Chinese, English, Flemish, Dutch, French, German, Greek, Lebanese, Mandarin, Northern Sotho, Polish, Portuguese, Sepedi (Pedi), Sotho (Sesotho), Spanish, Tswana (Setswana), Turkish, Venda, Xhosa, and Zulu. This is typical of the language demographics of South African schools, particularly in Gauteng (Adler, 2001; Kallenbach, 2007). Teachers were both first- and second-language English speakers, and the learners were reported to come from a range of socioeconomic backgrounds. Participants were excluded if they had any notable medical history related to speech, language or hearing problems, and if they were attending or had attended speech or language therapy. This last criterion was necessary as individuals who experience speech or language difficulties would not be good candidates for data collection on normative linguistic behaviours (Newcomer & Hammill, 1985; Peters & Guitar, 1991; Smith & Leinonen, 1992). Hearing loss is a crucial exclusionary criterion, as the pattern of communication development is different in individuals with hearing loss as opposed to those without (Grant Nicholas, 2000).

There were 264 females and 200 males, 347 of whom were first-language English speakers, and 117 of whom were second-language speakers of English. Although there were unbalanced numbers in each of the two language groups, the sample sizes were sufficiently large to perform meaningful statistical analyses (Howell, 2002). Individuals participating as second-language speakers of English reported their first languages on a questionnaire. The participants were also sub-divided into junior and senior phase groups for some of the analyses. This is because adolescence spans too much of an age range and encompasses too much development to be considered holistically (Larson & McKinley, 1993). The junior split consisted of participants in Grades 8 and 9, while the senior group contained individuals from Grades 10, 11 and 12. Nineteen classes from Grades 8 to 12 participated (Grade 8 = 5 classes; Grade 9 = 6 classes; Grade 10 = 1 class; Grade 11 = 6 classes; and Grade 12 = 1 class).

Ethical considerations

Permission for the study was initially obtained from the Committee for Research on Human Subjects (Non-Medical), Faculty of Humanities, University of the Witwatersrand [Protocol number: H050605]. Additionally, the study was approved by the Gauteng Department of Education.

Data collection and procedures

The Listening/Grammar subtest of the Test of Adolescent Language (TOAL)

(Hammill *et al.*, 1980) presents the participant with three sentences to which they must attend and listen (Hammill *et al.*, 1980). Two of the sentences must be matched for similar meaning. Each participant was provided with an answer sheet containing three choices for each question (i.e. A, B, or C). The learners were instructed on how to answer the questions, according to the directions in the test manual and a practice item was given, also according to the test guidelines. The sentences may be repeated once only, and if repetition is required, all three sentences must be repeated (Hammill *et al.*, 1980). The test was amenable to group administration, thus decreasing the amount of time necessary for data collection.

A *one-page questionnaire* was designed by the researchers, to obtain information deemed pertinent to the language abilities of adolescents. The biographical details included the individual's date of birth, grade, gender, first/home language, attendance at speech therapy, hearing status, and any significant medical conditions. These were merely for classificatory purposes, and to ensure that participants met the inclusion criteria. In addition, participants were asked various questions about their daily habits, with regard to communication, reading habits, and preferred processing style in the classroom.

Scoring

The TOAL subtest was scored according to the method prescribed by its authors, yielding raw and scaled scores. The ranges for the scaled scores, which determine whether individuals fall within the average, above average, or below average categories (Hammill *et al.*, 1980) were applied to the results and are as follows:

Scaled score	Performance category
18 – 20	Superior
14 – 17	Above average
7 – 13	Average
3 – 6	Below average
0 – 2	Poor

The other variables were scored as indicated in Table 1.

Data analysis

Descriptive statistics (means, ranges, standard deviations, and sample sizes) were calculated for each of the factors considered in the analysis. A three-way analysis of variance (ANOVA) (Howell, 2002) was completed for the major interaction effects (language status, grade, and gender) and correlations and *t* tests (Howell, 2002) were performed in order to identify significant relationships between the complex comprehension score and the other variables considered. All analyses were completed using the SAS System (SAS, 2004).

Table 1 Scoring of variables

Variable	Scoring
Time spent reading for school each week	Hours and minutes
Time spent reading for personal enjoyment each week	Hours and minutes
How many television programmes are watched per week	Number per week
Amount of time spent playing video or computer games each week	Hours and minutes
Last Summative English mark	Symbols (A, B, C etc.) coded for spreadsheets and then interpreted accordingly
Last school report average	Symbols (A, B, C etc.) coded for spreadsheets and then interpreted accordingly
Preferred learning style — auditory, visual, both	Coded for analysis: 0 – auditory 1 – visual 2 – both
Preferred learning style — group or individual	Coded for analysis: 0 – group learning 1 – individual learning
Number of SMSs sent	Number per day

Results and discussion

Initially overall results obtained on the complex sentence comprehension test are reported. Thereafter, specific results are reported in accordance with the aims of the study.

Generally, participants scored within the average range on the TOAL Listening/Grammar subtest. Although there were some outliers, results mainly fell within normal limits.

Ten (2.16%) of the participants achieved in the poor range; 94 (20.26%) obtained below average scores; 322 (69.4%) were average; 38 (8.19%) were deemed above average; and no participant fell within the superior range. These figures show that approximately 78% of the participants achieved at least average scores on the complex sentence comprehension assessment, suggesting that for this particular group of adolescents, the listening comprehension of complex sentence structures is not problematic. However, the fact that such a high number ($n = 104$) of the learners, scored below average is of concern. Their difficulty in understanding complex sentences would affect their ability to cope with the language demands of secondary education. Specifically, it was the second-language males in the junior phase who obtained the worst overall scores, suggesting that poorer performance by some second-language learners persists into the early high school years but that this tends to resolve by the higher grades. It may therefore take 8–9 years of formal schooling for certain individuals to acquire the requisite academic

language proficiency, particularly if they are learning in their second language. This has important implications for the teaching and assessment of second-language learners. It suggests, firstly, that teaching should continue to be facilitative of language learning well into secondary school and, secondly, that second language learners should not be assessed against the same standards as their monolingual peers until late into this phase of education.

Complex sentence comprehension results according to language status, grade and gender

Table 2 contains the means, ranges, and standard deviations for the scaled test scores, followed by the sample sizes. Scaled scores are interpreted according to Hammill *et al.* (1980). Only the main effect of gender was statistically significant ($F(1; 463) = 7.39; P < 0.01$). The female participants tended to out-perform the male participants. Overall, females had an average scaled score of 9.74 ($n = 264$), and males an average score of 8.36 ($n = 200$). Also, the female scores appear to fall within similar ranges to the males, although they often have higher minimum and maximum scores. Although the difference was significant, both male and female scores fall within the “average” range in terms of the test interpretation. Schutte (1998) claims that converging evidence in the fields of cognition, neuro-psychology and neuro-anatomy confirms gender differences in cognitive competence, hemispheric specialization and inter-hemispheric relationships. General trends suggest that females tend to have better verbal abilities, perceptual speed and manual dexterity; and males have better visual-spatial and mathematical abilities (Halpern, 1992; Tartre, 1990; Schutte, 1998; Westen, 1999). These kinds of gender differences have been documented in many countries and have not changed over time, leading researchers to theorise that there are differences in the brains of females and males (Westen, 1999). How males versus females are treated or encouraged, within their home culture, may also be partially responsible for areas of strength, and by extension, the discrepancies in male/female performance (Westen, 1999). Another possible reason is that males and females may simply have different areas of interest overall (Murphy & Davidshofer, 2001). These authors caution that this is merely a general trend and not an overall generalization. It is this general trend which, one might hypothesise, accounts for the statistically significant gender differences in the test scores.

Although there was no significant difference between junior and senior phase participants overall, junior phase females obtained a mean score of 9.19 ($n = 154$) in comparison to the junior phase males, who obtained 8.18 ($n = 113$). A similar pattern is evident for the senior phase females and males. The former demonstrated a mean score of 10.51 ($n = 110$), and the latter a mean score of 8.59, which, although markedly different, still fall within the “average” range as suggested by the test. This shows that the difference between males and females holds within both the junior and the senior phase groups.

A most encouraging finding is the lack of statistically significant differen-

ces between the first- and second-language English learners, suggesting that by the time the ESL learners in this study reached late secondary school, they no longer demonstrated differences from their monolingual peers with respect to complex sentence comprehension. However, the mean scores in Table 2 show that the second-language English speaking participants tended to score, on average, one scaled score below the first-language English participants, suggesting that they have not quite reached the proficiency levels of the first language participants. This means that even after a substantial amount of educational exposure to the second language, exact catch-up and equality with monolingual peers is not always seen (Lewelling, 1991).

Table 2 Mean scaled scores on the Listening/Grammar subtest of the TOAL by grade, gender and language

	Junior Phase		Senior Phase	
	Male	Female	Male	Female
First language	8.32 Range = 1-14 SD = 2.78 n = 85	9.45 Range = 2-16 SD = 2.84 n = 113	8.55 Range = 3-14 SD = 2.36 n = 65	10.68 Range = 4-16 SD = 2.88 n = 84
Second language	7.75 Range = 1-15 SD = 3.61 n = 28	8.46 Range = 1-14 SD = 3.15 n = 41	8.68 Range = 2-14 SD = 2.64 n = 22	9.96 Range = 4-16 SD = 3.47 n = 26
Overall	8.18 Range = 1-15 SD = 3 n = 113	9.19 Range = 1-16 SD = 2.95 n = 154	8.59 Range = 2-14 SD = 2.42 n = 87	10.51 Range = 4-16 SD = 3.03 n = 110

Relationship between complex sentence comprehension scores and other variables investigated within the study

The graphs (Figures 1 to 4) depict the mean scores for variables investigated, according to language, grade and gender. In each case, significant relationships between variables are discussed, and important points highlighted.

Figure 1 suggests that the participants say that they spend more time reading than playing video and computer games.

The language comprehension score was found to have a positive correlation with the amount of time spent on recreational reading ($r = 0.165$; $P < 0.01$), and a negative correlation with the amount of time spent playing video/computer games ($r = -0.199$; $P < .0001$). Therefore additional reading could facilitate language comprehension skills. Conversely, individuals who performed better on the comprehension test may have better overall language, which results in more recreational reading. Indeed, it is said that stronger oral performance in a language leads to better reading and writing skills (Merrifield, 1998). Additionally, increased time playing games correlates with lower

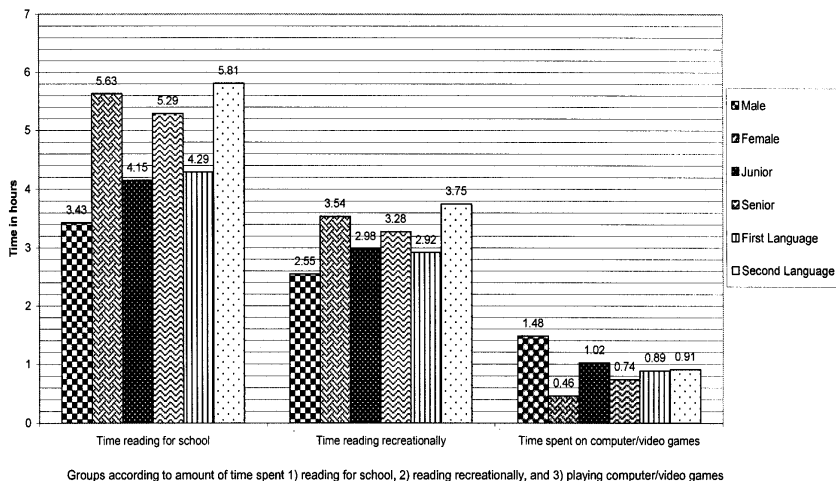


Figure 1 Amount of time spent reading for school, reading recreationally, and playing computer/video games per week

complex sentence comprehension scores. It could be hypothesised that individuals who are more exposed to computer or video games are not interacting with others during these times or reading meaningful texts, and are therefore not refining their language skills.

The main effect of grade was found to be significant for the amount of time spent playing computer or video games each day ($F(1; 450) = 4.56; P < 0.05$). Younger individuals are reportedly playing more games on a daily basis than older individuals, suggesting that younger adolescents may be receiving less homework each day, which frees up time for such recreational pursuits. The main effect of gender was found to be significant for the amount of time spent reading for school each week ($F(1; 450) = 4.35; P < 0.05$) and the amount of time spent playing computer or video games per day ($F(1; 450) = 32.84; P < .0001$). Females were found to read more than their male counterparts, and although this effect was found for recreational reading, it is possible that this extends to reading for school, and ties in with Gallik's (1999) observation that girls read more than boys at every age. The males in this study appeared to spend more time playing computer or video games than the girls did. The results hold with previously identified trends, where boys may spend twice as much time playing video games than girls (Media Literacy, 2004), because games are marketed predominantly for boys (Media Scope, 2005). A first-order interaction effect of language and gender ($F(1; 448) = 5.23; P < 0.05$) was yielded for the number of television programmes watched by individuals on a weekly basis. Individuals most likely to watch more television programmes were second-language English females. It was also found

that television-watching was unrelated to the amount of reading done per week, which is a finding consistent with that of Gallik (1999).

Figure 2 shows that in all groups there were strong preferences for either a visual or auditory learning style. A few (4–10%) of the learners showed no preference.

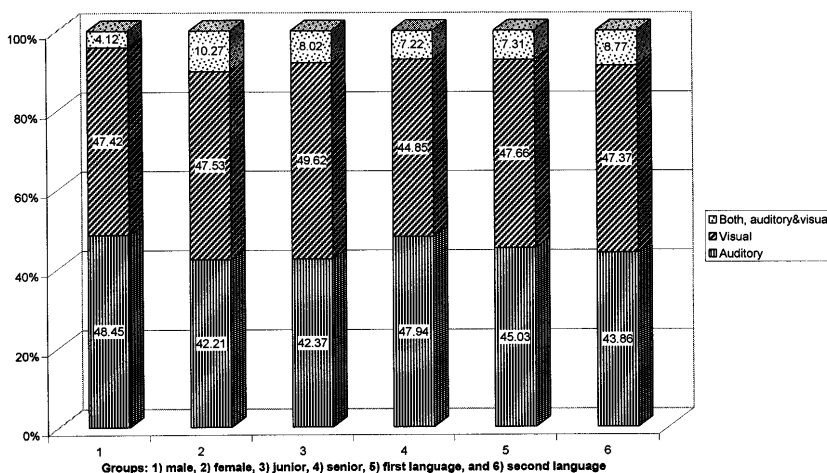


Figure 2 Percentage of adolescents preferring either an auditory, visual or combined learning style

The main effect of gender was found to be significant for learning style ($F(1; 456) = 4.88; P < 0.05$). Male participants were more inclined towards the auditory modality of presentation, female participants were more inclined to the visual modality, and more females than males tended to prefer dual presentation modalities.

There is a significant relationship between learning style and the scores on the Listening/Grammar subtest of the TOAL (Figure 3). Individuals who prefer to learn on their own are likely to do significantly better in an individual assessment situation but if group work, as currently emphasised in the OBE curriculum, is practised, then individual assessment may not accurately reflect ability. The main effect of gender was found to be significant for group versus independent learning style ($F(1; 445) = 11.85; P < 0.001$). Males stated a preference for group learning, while the majority of females preferred learning on their own.

The language comprehension score was found to have a positive correlation with the most recent school report mark ($r = 0.27; P < .0001$) and the most recent English mark ($r = 0.28; P < .0001$) (Figure 4). Individuals who performed better on the task of complex sentence comprehension do better in

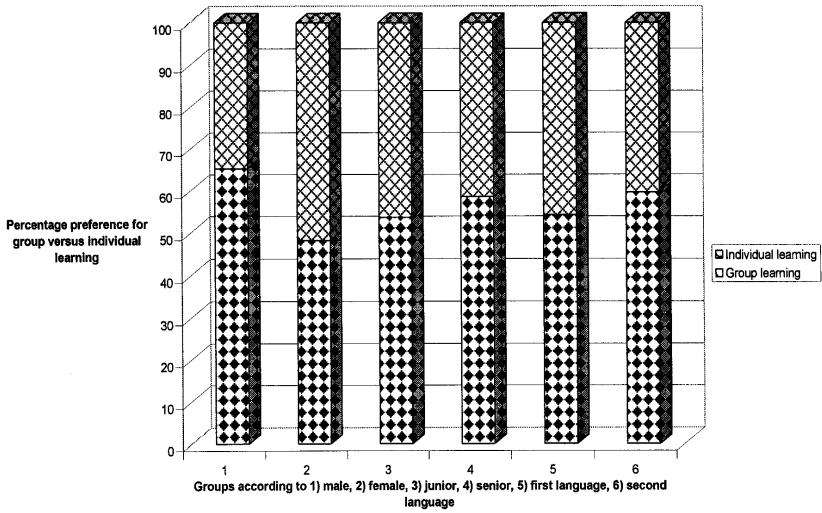


Figure 3 Group versus individual learning styles

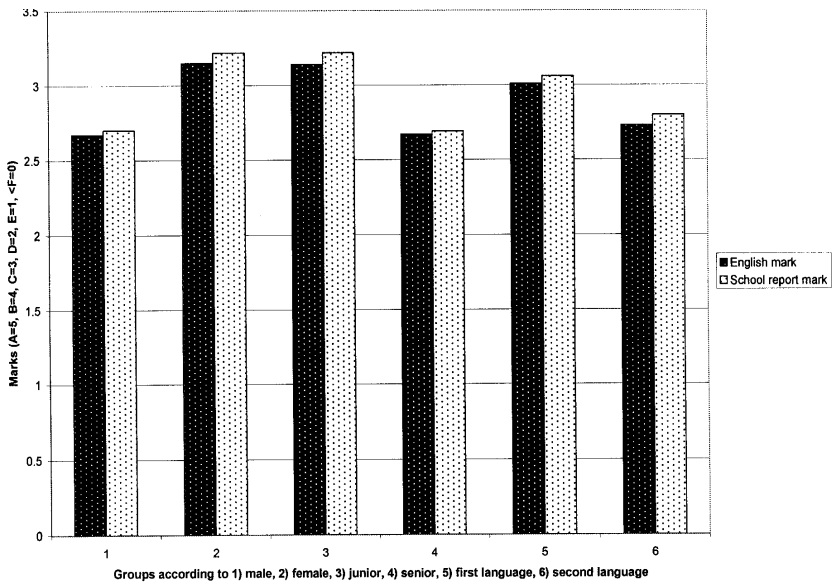


Figure 4 English and school report marks

academic language work. This is the premise on which the current study is based. Individuals with better academic linguistic proficiency will do better within the high school classroom where complex language is used to communicate information (Westby, 1994; Wiig, 1995).

The main effect of grade was found to be significant for the most recent English mark ($F(1; 461) = 24.85; P < .0001$) and most recent school report average ($F(1; 453) = 25.62; P < .0001$). Younger individuals were also demonstrating higher overall English marks and school report averages than senior participants. As discussed previously, language and school demands increase significantly through the high school years (Westby, 1994). Thus individuals may cope better in the earlier high school grades and may begin to perform less well with greater linguistic and academic load.

The main effect of gender was found to be significant for most recent English mark ($F(1; 1;461) = 4.99; P < 0.05$) and most recent school report average ($F(1; 453) = 8.07; P < 0.01$). Girls were more likely to have attained higher average English marks and school report averages than boys, again paralleling other results in the literature, reflecting differences in performance on different tasks (Gallik, 1999; Halpern, 1992; Tartre, 1990; Schutte, 1998; Westen, 1999).

The main effect of language was significant in the case of most recent school report average ($F(1; 453) = 4.10; P < 0.05$). First-language English speakers tended to do better than second-language speakers. As Cummins (1991) points out, processing of second language is less automated than first-language processing.

A first-order interaction effect of grade and gender ($F(1; 461) = 6.35; P < 0.05$) on most recent English mark was found. The interaction effect shows that junior females performed the best in terms of most recent English mark obtained.

Summary and conclusion

In this study we focused on an important aspect of academic language competence, namely, complex syntax comprehension. The significance of this language skill for academic purposes is confirmed by the positive correlations between scores on the TOAL Listening Grammar subtest and English marks as well as general academic achievement. In the population studied, however, most of the learners obtained average sentence comprehension scores. This implies that on a listening test, they are able to understand complex language structures. It does not, however, mean that they would find the same sentences as unproblematic in a reading or written task. Future research could investigate such tasks. The test used in this study does not assess the understanding of abstract vocabulary or higher level metaphorical language, which would also affect the learners' ability to cope with academic language and literacy tasks.

In second-language English speakers, complex sentence comprehension was not found to be outside the normative range and first- and second-language learners did not perform significantly different on the test. However,

second-language English speakers' scores fell consistently marginally below those of first-language speakers, thus alluding to Jooste's (2003) notion of the "moving target" for second-language learners. In other words, as second-language learners are developing and using their skills, so are first-language learners, effectively creating a fluid goal, which is difficult for second-language learners to attain. This has implications for the school system in South Africa in that, where these second language students appear to be coping well and achieving within the same range as their first-language peers, educators should not regard their performance in the classroom as "average" and therefore "good enough". These students may be performing consistently lower, because academic language proficiency is not as developed as it might be.

It should be noted that only one school was used for the collection of data. This may have limited the kind of individuals who were sampled, in terms of socioeconomic status or school experience. Using various different schools around Gauteng may have made the data more generalisable. This study should therefore be replicated in different socioeconomic areas. The current study was conducted at a middle-class, former Model C government school. Future research may focus on other educational contexts in order to compare academic language proficiency at similar levels of education. It may also investigate the language status and proficiency of teachers in relation to learner performance.

This study has provided an indication as to the factors that need to be considered in adolescent populations and is therefore a springboard, both for continuing research in the field of adolescent language and academic proficiency, and to begin to understand the specific and complex factors related to adolescent language development and academic skills in South Africa. It is by no means comprehensive in terms of all expected skills, and we do not claim to glean entirely new information. We already know the basis of adolescent language skills and what appears to be necessary for academic success, based on research from other countries. However, within the multilingual, multicultural landscape of South Africa, the significant role of language in education may not always be fully acknowledged, and teachers may need to be more aware of the differing needs of the diverse learners in their classrooms.

References

- Adler J 2001. *Teaching Mathematics in Multilingual classrooms*. Kluwer. Academic Publishers: Dordrecht.
- Alexander N 1999. *English Unassailable but Unattainable: The Dilemma of Language Policy in South African Education*. Available at <http://www.und.ac.za/und/ling/archive/alex-01.html> (9/1/06)
- Bashir AS, Conte BM & Heerde SM 1998. Language and School Success: Collaborative Challenges and Choices. In: DD Merritt & B Culatta (eds). *Language Intervention in the Classroom* (pp. 1-35). San Diego: Singular Publishing Group, Inc.
- Braam D 2004. Community perception of change in a school's language policy. *PRAESA Occasional Papers*, 21. Cape Town: PRAESA (Project for the Study of

Alternative Education in South Africa).

- Cummins J 1979. Linguistic interdependence and the educational development of bilingual children. *Review of Educational Research*, 49:222-251.
- Cummins J 1991. Interdependence of first- and second-language proficiency in bilingual children. In: E Bialystok (ed.). *Language processing in bilingual children* (pp. 70-89). Cambridge: Cambridge University Press.
- Cummins J 2000. *Language, power and pedagogy: bilingual children in the crossfire*. Clevedon: Multilingual Matters Ltd.
- De Klerk V 2002. Language issues in our schools: Whose voice counts? Part 1: The parents speak. *Perspectives in Education*, 20:1-14.
- De Wet C 2002. Factors influencing the choice of English as language of learning and teaching (LoLT) — a South African perspective. *South African Journal of Education*, 22:119-124.
- Gallik JD 1999. Do they read for pleasure? Recreational reading habits of college students. *Journal of Adolescent and Adult Literacy*, 42:480-488.
- Genesee F, Paradis J & Crago MB 2004. *Dual language development and disorders: a handbook on bilingualism and second language learning*. Baltimore: Paul H. Brookes Publishing Co., Inc.
- Grant Nicholas J 2000. Age Differences in the Use of Informative/Heuristic Communicative Functions in Young Children With and Without Hearing Loss Who Are Learning Spoken Language. *Journal of Speech, Language and Hearing Research*, 43:380.
- Halpern DF 1992. *Sex Differences in Cognitive Abilities*, 2nd edn. Hillsdale, NJ: Lawrence Erlbaum Associates, Publishers.
- Hammill DD, Brown VL, Larsen SC & Wiederholt JL 1980. *Test of Adolescent Language*. Austin, TX: Pro-ed.
- Hammill DD, Brown VL, Larsen SC & Wiederholt JL 1994. Test of Adolescent Language (TOAL 3). Available at <http://www.agsnet.com/Group.asp?nMarketInfoID=42&nCategoryInfoID=2671&nGroupInfoID=a19060>. Retrieved 13/11/2005.
- Heugh K 2000. The case against bilingual and multilingual education in South Africa. *PRAESA Occasional Papers*, 6. Cape Town: PRAESA (Project for the Study of Alternative Education in South Africa).
- Hoff E 2005. *Language Development*, 3rd edn. Wadsworth, US: Thomson Learning, Inc.
- Howell DC 2002. *Statistical Methods for Psychology*, 5th edn. Pacific Grove, CA: Duxbury.
- Ianco-Worrall A 1972. Bilingualism and Cognitive Development. *Child Development*, 43:1390-1400.
- Irving T 2005. Reading Comprehension in English First and Second Language Grade 7 learners. Unpublished Research Report, Speech Pathology and Audiology, University of the Witwatersrand.
- Jooste N 2003. Learning through a second language: A comparative study of the performance in reading comprehension and the cognitive-linguistic processes involved in reading comprehension between first-language English learners and second-language English, first-language isiXhosa learners at a Grade 5 level. Unpublished Masters' dissertation: University of Cape Town.
- Kallenbach A 2007. Language for Academic Purposes: Performance of Grade One English Additional Language Learners on the Diagnostic Evaluation of Language Variation (DELV). Unpublished Research Report, MA in Speech Pathology, University of the Witwatersrand, Johannesburg.
- Larson VL & McKinley NL 1993. Clinical Forum: Adolescent Language. An

- Introduction. *Language, Speech, and Hearing Services in Schools*, 24:19-20.
- Lewelling VW 1991. Academic Achievement in a Second Language. *ERIC Digest*. Washington, DC: ERIC Clearinghouse on Languages and Linguistics. Available at <http://www.ericdigests.org/pre-9219/second.htm>. Retrieved 11/11/2005.
- Lewis F 2004. Curriculum integration and curriculum innovation — challenges to the school speech-language therapist of today. *Communiphon*, 337:36-37.
- Macdonald CA 1990. *Crossing the threshold into standard three. Main report of the Threshold Project*. Pretoria: Human Sciences Research Council.
- Malherbe EG 1978. *Education in South Africa*, Vol.2. Cape Town: Juta and Co.
- MediaLiteracy 2004. *Facts and Figures About Our TV Habit*. Available at http://www1.medialiteracy.com/stats_technology.jsp. Retrieved 12/05/2005.
- Media Scope 2005. *Girls and Video Games*. Available at <http://www.mediascope.org/pubs/ibriefs/gvg.htm>. Retrieved 12/05/2005.
- Merrifield SR 1998. Failure as Discrimination: One Professor's Response to a College-Wide Examination of Proficiency in Writing. In: BM Franklin (ed.). *When Children Don't Learn. Student Failure and the Culture of Teaching*. (pp.116-133). New York: Teachers College Press.
- Morrow N, Jordaan H & Fridjhon P 2005. The effects of educational context on the understanding of linguistic concepts in English and isiZulu by Grade 7 learners. *South African Journal of Education*, 25:164-169.
- Murphy KR & Davidshofer CO 2001. *Psychological Testing. Principles and Applications*, 5th edn. New Jersey: Prentice Hall.
- Nelson NW 1993. *Childhood Language Disorders in Context: Infancy through Adolescence*. New York: Merrill.
- Newcomer PL & Hammill DD 1985. *Test of Language Development. Primary*. Texas: Pro-ed.
- Ntshingila F 2006. Most speak Zulu at home, English at work, says survey: warning that African languages face extinction. *Sunday Times*, 4.
- Olivier C 1999. *How to educate and train Outcomes-Based*. Pretoria: J.L. van Schaik Publishers.
- Owens RE 2004. *Language Disorders: a functional approach to assessment and intervention*, 4th edn. Boston: Pearson Education, Inc.
- Owens RE 2008. *Language Development: An Introduction*, 7th edn. Boston: Pearson Education, Inc.
- Pandor N 2006. Speaking notes, Minister of Education, Naledi Pandor MP, at the Language Policy Implementation in HEIs Conference, UNISA, Pretoria. Available at <http://www.education.gov.za/dynamic/dynamic.aspx?pageid=306&id=2290>. Retrieved October 26 2006.
- Peters TJ & Guitar B 1991. *Stuttering. An Integrated Approach to its Nature and Treatment*. Baltimore: Williams & Wilkins.
- Schutte EM 1998. The Suitability of Published Neuropsychological Test Norms for Urban Black South African Secondary School Students. MEd dissertation. University of the Witwatersrand.
- Scott CM & Stokes SL 1995. Measures of Syntax in School-Age Children and Adolescents. *Language, Speech, and Hearing Services in Schools*, 26:309-319.
- Snow CE, Cancino H, de Temple J & Schley S 1991. Giving Formal Definitions: A linguistic or metalinguistic skill? In: E Bialystok (ed.). *Language processing in bilingual children* (pp. 70-89). Cambridge: Cambridge University Press.
- Smith BR & Leinonen E 1992. *Clinical Pragmatics. Unravelling the Complexities of Communicative Failure*. London: Chapman & Hall.
- Tartre LA 1990. Spatial Skills, Gender, and Mathematics. In: E Fennema & GC Leder (eds). *Mathematics and Gender* (pp. 27-59). New York: Teachers College Press.

- Tyobeka PT 2006. An Open Letter to all Primary school Principals. Department of Education, Republic of South Africa.
- The SAS System 2004. Release 9.13 (TS1M3) for Windows. SAS Site Licence at Wits University. Cary, NC: SAS Institute Inc.
- Uys M, Van der Walt J, Van den Berg R & Botha S 2007. English Medium of instruction: a situation analysis. *South African Journal of Education*, 27:69-82.
- Welman JC & Kruger SJ 2001. *Research Methodology*, 2nd edn. Cape town: Oxford University Press.
- Westby C 1994. Communication Refinement in School Age and Adolescence. In: O Haynes & B Shulman (eds). *Communication Development: Foundations, Processes & Clinical Applications* (pp. 341-383). NJ: Prentice-Hall.
- Westby C 2004. 21st Century Literacy for a Diverse World. *Folia Phoniatrica et Logopaedica*, 56:254-271.
- Westen D 1999. *Psychology. Mind, Brain, & Culture*, 2nd edn. New York: John Wiley & Sons, Inc.
- Wiig EH 1995. Assessment of Adolescent Language. *Seminars in Speech and Language*, 16:14-31.

Authors

Danielle van Rooyen is an Audiologist and Speech therapist at St Vincent School for the Deaf. Her areas of interest include child language development, aural rehabilitation, and Deaf education.

Heila Jordaan is a Senior Lecturer in the Department of Speech Pathology and Audiology School of Human and Community Development, University of the Witwatersrand. Her research is on language in education, particularly in relation to children learning in an additional language.