

Tydskrif vir Taalonderrig - Journal for Language Teaching
- Ijenali yokuFundisa iLimi - Ijenali yokuFundisa iiLwimi -
Ibhuku Lokufundisa Ulimi - Tšenale ya tša Go ruta Polelo
- Buka ya Thuto ya Puo - Jenale ya Thuto ya Dipuo - Ijenali
Yekufundzisa Lulwimi - Jena?a ya u Gudisa Nyambo
- Jenala yo Dyondzisa Ririmi - Tydskrif vir Taalonderrig -
Journal for Language Teaching - Ijenali yokuFundisa iLimi
- Ijenali yokuFundisa iiLwimi - Ibhuku Lokufundisa Ulimi
- Tšenale ya tša Go ruta Polelo - Buka ya Thuto ya Puo -
Jenale ya Thuto ya Dipuo - Ijenali Yekufundzisa Lulwimi
- Jena?a ya u Gudisa Nyambo - Jenala yo Dyondzisa
Ririmi - Tydskrif vir Taalonderrig - Journal for Language
Teaching - Ijenali yokuFundisa iLimi - Ijenali yokuFundisa
iiLwimi - Ibhuku Lokufundisa Ulimi - Tšenale ya tša Go ruta
Polelo - Buka ya Thuto ya Puo - Jenale ya Thuto ya Dipuo -
Ijenali Yekufundzisa Lulwimi - Jena?a ya u Gudisa Nyambo
- Jenala yo Dyondzisa Ririmi
- Tydskrif vir Taalonderrig
- Journal for Language
Teaching - Ijenali
yokuFundisa iLimi -
Ijenali yokuFundisa
iiLwimi - Ibhuku
Lokufundisa Ulimi
- Tšenale ya tša
Go ruta Polelo -
Buka ya Thuto
ya Puo - Jenale
ya Thuto ya Dipuo
Ijenali Yekufundzisa
Lulwimi - Jena?a ya u
Gudisa Nyambo - Jenala
yo
Dyondzisa Ririmi - Tydskrif vir Taalonderrig
- Journal for Language Teaching - Ijenali
yokuFundisa iLimi - Ijenali yokuFundisa iiLwimi -
Ibhuku Lokufundisa Ulimi - Tšenale ya tša Go ruta
Polelo - Buka ya Thuto ya Puo - Jenale ya Thuto ya
Dipuo - Ijenali Yekufundzisa Lulwimi - Jena?a ya
u Gudisa Nyambo - Jenala yo Dyondzisa Ririmi
- Tydskrif vir Taalonderrig - Journal for Language
Teaching - Ijenali yokuFundisa iLimi - Ijenali
yokuFundisa iiLwimi - Ibhuku Lokufundisa Ulimi -
Tšenale ya tša Go ruta Polelo - Buka ya Thuto ya Puo -
Jenale ya Thuto ya Dipuo - Ijenali Yekufundzisa Lulwimi
- Jena?a ya u Gudisa Nyambo - Jenala yo Dyondzisa
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Teaching - Ijenali yokuFundisa iLimi - Ijenali yokuFundisa
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Polelo - Buka ya Thuto ya Puo - Jenale ya Thuto ya Dipuo -
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- Tšenale ya tša Go ruta Polelo - Buka ya Thuto ya Puo -
Jenale ya Thuto ya Dipuo - Ijenali Yekufundzisa Lulwimi
- Jena?a ya u Gudisa Nyambo - Jenala yo Dyondzisa
Ririmi - Tydskrif vir Taalonderrig - Journal for Language
Teaching - Ijenali yokuFundisa iLimi - Ijenali yokuFundisa
iiLwimi - Ibhuku Lokufundisa Ulimi - Tšenale ya tša Go ruta



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Learning style and achievement in English of secondary school students: the relationship with demographic variables

Abstract

In the international arena English proficiency is crucial. In South African schools, many students who study through medium of English have underdeveloped linguistic skills. Their English proficiency may improve if they are taught in consideration of their learning styles. Therefore, the main research problem of this study was: How can the teaching of English at school be enhanced in consideration of student learning style and classroom diversity? To address this question, the study investigated academic achievement in English and learning style, and their relationship with demographic variables; the differences in the learning styles of the top and the low achievers in English; and how the top-achieving students learned English in different contexts. The sample comprised 240 students enrolled at an independent school in the North-West Province of South Africa. The study implemented a

mixed method research design by means of a structured questionnaire, followed by interviews with ten of the top-achieving students selected to ensure maximum diversity. The results indicated significant differences in the achievements in English and the learning styles of different student groups. The qualitative phase of the research shed light on the learning styles of the top performers in English in different contexts and sub-fields of English. Recommendations were made on how the teachers can take students' learning styles and classroom diversity into consideration in their classroom teaching in the quest to improve academic achievement in English.

Keywords: demographic variables; Dunn and Dunn model; English achievement; English teaching; learning style; secondary school students; VARK model.

1. Introduction

Within the international arena English proficiency has significant communicative, economic and academic relevance (Jenkins, Cogo & Dewey, 2011). In South Africa (S.A.), in recognition of the importance of English as *lingua franca* internationally and its status as preferred language of commerce, education and government within the country (Orman, 2008), English is listed as a core subject in school curricula. However, many students¹ who study through medium of English have underdeveloped linguistic skills (Wildsmith, 2013). One way to address this concern is by teaching English in consideration of the learning styles of the students. Although a few researchers maintain there is no substantial evidence to support the notion of matching teaching and learning styles for effective learning (Pashler, McDaniel, Rohrer & Bjork, 2008), ample evidence indicates that students' academic performances improve when they are taught according to their learning preferences (Naimie, Siraj, Ahmed Abuzaid & Shagholi, 2010; Amran, Bahry, Yusop & Abdullah, 2011; Peterson, Carne & Freear, 2011; Zhou, 2011; Aliakbari & Qasemi, 2012; Elci, Kilic & Alkan, 2012; Bhatti & Bart, 2013; Ghaedi & Jam, 2014). Matching the teaching style to the majority of the students' learning styles in a classroom enables the students to retain information for much longer and to apply it more efficiently and effectively than their counterparts who experience mismatches between learning and teaching styles (JilardiDamavandi, Mahyuddin, Elias, Daud & Shabani, 2011).

The relationship between learning style and achievement is, however, not simple since demographic variables influence learning style, and thus achievement. A review of the literature revealed that male and female students use different learning styles (Ahmad, Jelas & Ali, 2011; Gurian, 2011; Ren, 2013; Ahanbor & Sadighi, 2014). Male students seemed to be more visual and kinaesthetic learners than females who tended to be more auditory-oriented (Ren, 2013). A study by Dobson (2010) indicated, in rank order, a visual, auditory and kinaesthetic preference for females; and a visual, kinaesthetic, read/write, auditory preference for males.

Other variables that seem to impact on learning style, are culture² and nationality. One study found learning style differences between Western, Middle-Eastern and Eastern business students (Naik, 2013). Students from the Eastern cultures tend to be, to a greater extent than other cultural groups, auditory learners (Tileston, 2004); and Asian students reported a stronger preference for tactile learning (handling objects) than Australian students (Ramburuth & McCormick, 2001).

Learning style is also influenced by context, of which group or individual learning is an example. The students in one study generally preferred group-learning, even though individual learners often achieved higher grades (Peters, Jones & Peters, 2008). The

1 In this article 'student' is used and not 'learner' in line with practice at the independent school where the study was conducted.

2 Culture is viewed as a social system of shared actions, meanings and symbols that are mutually accepted by groups of people. It is not the same as nationality as one nationality may include several cultures. At the same time, different nationalities can be expected to differ with regard to culture/s.

way the groups are formed and how they function seem important. This is illustrated by a study with students enrolled for English Foreign Language (EFL): when the students were grouped into homogenous groups regarding learning style, they outperformed those students who were divided into heterogeneous groups. In addition, if the groups worked in an online learning environment they learnt more effectively than those groups that worked in a traditional paper-based environment (Kuo, Chu & Huang, 2015). Subject is also an important contextual factor since the effectiveness of a learning style may vary for different subjects or fields within the same subject. There were significant differences in the learning styles used by students for different sub-fields of medicine which affected their achievement (Khanal, Shah & Koirala, 2014).

In this article, the focus is on the subject English. A number of studies on learning styles has focussed on the learning of English as second language or EFL (Bas & Beyhan, 2013; Palabryik, 2014; Kuo et al., 2015). A Turkish study investigated the relationship between the learning style and the language proficiency of EFL grade 9 students (Palabryik, 2014). According to the qualitative data, insight into their own learning styles enhanced the students' achievement in English. The students preferred a kinaesthetic style, followed by auditory and visual styles; group learning was the least preferred due to miscommunication, the unequal distribution of responsibility, noise and confusion. However, the way in which the groups were formed could have played a role, as indicated. Another study in Turkey that investigated the effect of learning style-based teaching on the achievements of grade 7 students in English found that such teaching significantly enhanced the students' attitudes, achievements and levels of retention in English (Bas & Beyhan, 2013).

With the above as background, the main research problem of this South African-based study was: *How can English be taught at school in consideration of student learning style and student diversity in the classroom?*

2. Research Questions

To answer the main research problem, the study sought answers to the following three research questions. Research question RQ1: *To what degree is there a significant relationship between demographics variables (age/form³, nationality and gender), and academic achievement in English as well as the learning styles of the students in a selected secondary school?* Answers to this question could shed light on the possible relationship between demographic variables and achievement in English as well as on the learning styles of the different student groups.

3 At the independent school where the research was conducted the term 'form' is used, and not 'grade'.

RQ2: *To what degree is there a significant difference between the learning styles of the high and the low achieving students in English?* Answers to this question could enhance the insight into the possible relationship between achievement in English and the learning styles of successful and unsuccessful students.

RQ3: *How do the top-achieving students in English learn the subject at home and at school?* Learning what works well with regard to teaching and learning in this key subject could offer important guidelines for effective teaching. The investigation was conducted against the theoretical framework on constructivist learning and on a combination of two learning style models, which are explained in the next section.

3. Theoretical framework: Learning theory and learning style models

The constructivist learning theory is of significant importance in the entire field of educational psychology and is widely accepted by practitioners (Donald, Lazarus & Lolwana, 2010:79). This theory of learning indicates that knowledge is not passively absorbed but actively constructed and reconstructed through experience and by making meaning. For effective learning to take place, teaching needs to link new knowledge to previous knowledge, together with the scaffolding of new knowledge. In order to ensure learning, social constructivists, such as Vygotsky (1978), emphasised the role of meaningful social experiences where the students collaborate and the teachers act as facilitators and mediators of appropriate structures. Collaboration with their peers and teachers enables the students to move beyond what they can learn on their own, referred to as the 'zone of proximal development'. During learning, language plays an important role. Cooperative group work, discussions and other group activities are emphasised (Nel & Nel, 2013), although the effectiveness of group work is influenced by nationality, culture (Palabryik, 2014) and other contextual factors (Kuo et al., 2015).

In a constructivist classroom the students construct their knowledge in different ways according to their individual learning styles. A learning style "is the consistent preference over time ... for observing, reflecting about and classifying or organising information in a specific way" (Schulze, Snowman & McCown, 2016:13). Although there are different ways of classifying learning styles as pointed out by Bosman (2015), two models were selected for this study for two reasons: their simplicity and their practical usefulness for classroom teachers. The first model is widely used and is based on the sensory modality preferences when acquiring knowledge (Dobson, 2010; Juskeviciene & Kurilovas, 2014). The model initially comprised of three particular learning styles, namely visual (V), auditory (A) and kinaesthetic (K), thus forming the VAK model. An extension of this model was developed by Fleming (2001), and read/write (R) was added to the VAK model to form the VARK model (Pritchard, 2014). Students may be categorised as unimodal (singly V, A, R or K), bimodal, trimodal or quadmodal (Hawk & Shah, 2007; Mestre, 2010). Most students are visual learners who need to 'see' information to understand and remember it (Nel & Nel,

2013). They, therefore, need many visual aids such as drawings and maps to construct new knowledge. Auditory learners rely on hearing information in order to remember it. Thus they prefer listening activities, such as lectures. Generally, they make up about 20% or less of a class (Nel & Nel, 2013). A preference for the reading/writing learning style is necessary for information displayed as words. Text-based inputs and outputs in all its forms, such as manuals, reports, essays and assignments are emphasised (Juskeviciene & Kurilovas, 2014; Fleming, 2015). Kinaesthetic learners need to move, smell, handle material, take things apart or to build structures. By means of these kinds of activities they discover new knowledge.

The second model that was considered is the Dunn and Dunn model which also enjoys substantial support (Englander, Terregrossa & Wang, 2013; Hermond, 2014). Using a more detailed approach than the VARK model, the Dunn and Dunn model consists of five learning style stimuli with several elements within each stimulus (Dunn & Burke, 2005). The five stimuli and their respective elements are environmental (room design, light, sound and temperature); emotional (responsibility, persistence, motivation and structure); social (learning individually, with a teacher, with a peer or group of peers, and mixed); physiological (mobility needs, energy patterns, and the use of perception during learning), and psychological practice (impulsive or reflective, global or analytic) (Dunn & Burke, 2005).

A comparison of the two models shows similarities. For example, the environmental stimulus of 'sound' of the Dunn and Dunn model relates to the auditory learning style of the VARK model; the 'mobility needs' and 'energy patterns' which are physiological stimuli of the Dunn and Dunn model, speak to the kinaesthetic learning style of the VARK model; and 'perception', as physiological element, relates to the visual aspect of the VARK model. Added to the Dunn and Dunn model is social learning. This style is about a preference for group-learning versus individual learning, and is of particular importance to teaching in a social constructivist classroom. Since this study was concerned with learning styles which had practical value for teachers, the following styles from the two models were selected for the empirical phase of the study: the visual, auditory, reading, writing, kinaesthetic, individual and group learning styles.

Against this background, the remainder of the article gives an account of the research design, as well as the results and conclusions of the study.

4. Research context, research design and methods of data collection

The research setting was a small independent (primary and secondary) school in the North-West Province of S.A. The secondary school has 358 students and 42 teachers of diverse nationalities and cultures. The school is well resourced: all classrooms have data projectors and sufficient textbooks, desks and chairs. Several sports amenities include a swimming pool, gymnasium, tennis and squash courts, as well as rugby and

soccer fields. The school differs from other schools in the province and in the rest of S.A. in that it follows the Cambridge syllabus so that many students stay on for A Level (post matric). About half the students at the secondary school come from countries to the north of S.A. (Zimbabwe, Botswana, Malawi, Zambia) and attend the school because of the Cambridge syllabus offered. The students who attend the school generally come from affluent families as the fees are quite high. The parents are either senior government officials or business people.

The study implemented a mixed method, sequential, explanatory research design (McMillan & Schumacher, 2014). We addressed RQ1 and RQ2 first in a quantitative phase, which consisted of data-collection by means of a questionnaire. We designed the structured questionnaire specifically for the study. In preparing the questionnaire, two experts in the field of learning styles ensured its content and face validity. Thereafter, we tested it in a pilot study with a small group of 10 students. The first section of the finalised questionnaire focussed on demographic variables (age, form, nationality and gender). The second section consisted of 85 items which measured the seven learning styles that we selected (auditory, visual, kinaesthetic, reading/writing, individual and group-learning). The students responded to the items by means of a five-point Likert scale that ranged from 1 ('definitely disagree') to 5 ('definitely agree'). Examples of the items which tested the different learning styles are:

"I enjoy listening to the teacher talking"- auditory style;

"I like to watch the teacher while showing me how to do something"- visual style;

"When I study I have to take many breaks" - kinaesthetic style;

"I do as much reading as possible" - reading style;

"When studying for a test or the exams I write a lot" - writing style;

"I work better when I work alone" - individual learning, and

"I like working in a group because then we can support one another" - group learning.

All the students in the secondary school were invited to participate. Of these students, 240 students who submitted consent forms from their parents/guardians, and who signed the assent forms, completed the questionnaire. Only one researcher, who was a teacher at the school, administered the questionnaires during a designated class time, with the permission of the principal. The students did not answer the questionnaire anonymously, since we added the students' achievement in English to each questionnaire at a later stage. (The school made the English marks available with the permission of all relevant parties.) The marks comprised the calculated average of the marks on the students' report cards at the end of the first semester (half way through the year) and at the end of the year.

After questionnaire completion, we calculated its reliability statistically by means of Cronbach's alpha coefficient, which gives an indication of the internal consistency of the scaled items. The alphas were 0.7 for the auditory and the kinaesthetic learning style while all the others were above 0.7, indicating acceptable reliability (McMillan & Schumacher, 2014). We analysed the data by means of the Statistical Package of the Social Sciences (SPSS). In the data analysis, we employed General Linear Modelling, that indicates effect size. If we found significant differences between different groups (in respect of demographic variables) we used Scheffe's post hoc tests to explore the differences further.

During the same year that the students completed the questionnaire, the researcher/teacher referred to above conducted interviews with students. To this end, we purposefully sampled 10 of the top-achieving students for maximum variety as regards form, gender and nationality. The interviewer conducted the one-to-one interviews in the classroom of the teacher/interviewer after school hours at a time convenient to the students. During the interviews the students explained how they studied English at home, which teaching methods worked well for them, and which methods were ineffective for classroom learning. We used several strategies to increase the trustworthiness of the qualitative data. We collected data over a prolonged period of about six months to allow for interim analysis and corroboration; one researcher conducted all the interviews; with the students' permission we audio recorded the interviews and transcribed them verbatim; and we were both involved in the data analysis to enhance the credibility of interpretations (McMillan & Schumacher, 2014). We analysed the data within each category (formed by the three main questions) by identifying units of meaning, and then forming sub-categories from them (McMillan & Schumacher, 2014).

5. Results

5.1 RQ1: Achievement in English and the learning styles of the student groups

The experimental hypothesis of RQ1 stated that significant differences existed in the academic achievements of the students in English and in the learning styles of those students who differ in respect of age and form, nationality and gender.

Age and form

As the students grew older, their marks in English deteriorated from 64.2% at 14 years and younger, to 63.6% (15 years); 62% (16 years); 60% (17 years) and 59% (18 years). However, the differences in their achievements were not statistically significant.

Looking at form, there was no clear pattern. Form 3 (67.7%) performed the best, while Form 6 (56.5%) performed the worst. Table 1 illustrates which of the means were significantly different from the others, as indicated by Scheffe's *post hoc* tests.

Table 1: Form and achievement in English

Forms that differed significantly	Means (%)	SD	F	Sign. (p)
3 with 4 and 6	67.7, 59 and 66.8	8.2, 9.6 and 11	12.63	P<0.01
5 with 4 and 6	66, 59 and 55	9.7, 9.6 and 11		

Df = 4

Table 1 illustrates that the achievements of the Form 3 students were significantly better than those of the Form 4 and 6 students. Likewise, the Form 5-students achieved significantly better than the Forms 4 and 6 students. Form 6 performed the worst.

As regards age, the students aged 14 years and younger were significantly more inclined to be auditory learners than those who were 16 years old ($M=3.6239$ and 3.3500 ; $F=4,004 = p<0.01$). However, no significant differences were found between the age groups with regard to the other learning styles ($p>0.05$ in all instances).

Nationality

When nationality was considered the rank-order of the countries for student achievement in English (from highest to lowest) was Malawi (63.2%), South Africa (62.9%), Zimbabwe (61.6%) and Botswana (57.9%), although the differences were not statistically significant. Likewise, no significant differences were ascertained between the different nationalities for any of the seven learning styles ($p>0.05$).

Gender

The 133 female students achieved significantly higher marks in English than the 107 male students ($M= 64%$ and $60.2%$, $F=7,408 = p<0.01$). Although the male students were more inclined to be group-learners than the female students ($M=3.5$ versus 3.3), the difference, according to Scheffe's *post hoc* tests, was not significant. Likewise, the male and the female students did not differ significantly with regard to being auditory or kinaesthetic learners ($p>0.05$). Table 2 indicates the instances where significant differences were found.

Table 2: Significant differences in learning style between the two genders

Gender	Learning style	Mean	SD	F
Male Female	Visual	3.45 3.73	.42 .46	22.766
Male Female	Reading	3.1 3.4	.66 .67	10.931
Male Female	Writing	3.34 3.6	.74 .7	7.836
Male Female	Individual	3.66 3.9	.81 .73	7.167

$P < 0.01$

Table 2 shows that the female students were significantly more visual learners than the male students, and they were also more inclined to adopt reading, writing and individual learning styles ($p < 0.01$ in all these instances).

5.2 RQ2: Learning styles of the top and the low achievers

The experimental hypothesis of RQ2 stated that there was a significant difference between the learning styles adopted by the top and the low achieving students in English.

Table 3 illustrates the different styles that the top and the low achieving students implement when studying English.

Table 3: The learning styles of the top and the low achieving students in English

Learning style	Achievement	N	Mean	SD	t-value	Sig.(p)
Auditory	50%- 75%+	32	3.47	.43	-1.18	$p > 0.05$
		28	3.61	.45		
Visual	50%- 75%+	32	3.67	.5	.34	$p > 0.05$
		28	3.63	.46		
Kinaesthetic	50%- 75%+	32	3.95	.49	2.42	$p < 0.05$
		28	3.65	.48		
Reading	50%- 75%+	32	3.18	.54	-2.29	$p < 0.05$
		28	3.52	.63		

Learning style	Achievement	N	Mean	SD	t-value	Sig.(p)
Writing	50%- 75%+	32	3.41	.8	-1.5	p>0.05
		28	3.69	.62		
Individual	50%- 75%+	32	3.63	.84	-2.18	p<0.05
		28	4.06	.64		
Group	50%- 75%+	32	3.51	.92	.85	p>0.05
		28	3.32	.77		

Table 3 illustrates that the high achievers in English implemented the auditory, reading, writing and individual styles, while the low achievers relied more on visual, kinaesthetic and group-learning. Particularly noteworthy is the fact that the high achievers were inclined to use reading and individual learning to study English. In contrast, the low achievers while learning, tended to move around the classroom and be active (using a kinaesthetic style).

5.3 RQ3: How English was learned and taught

On probing the top-achieving students on how they prepared for tests and the examinations in English grammar and literature, it was found that they actively constructed their own knowledge by particularly relying on reading, writing and individual learning. When implementing the reading style, the study strategies that they utilised involved examining the academic text in study guides as well as the comments and pointers; studying the notes given by the teacher and the teachers' comments when their essays were marked; analysing mark schemes published by the examining authority, and doing research on the internet. It was also clear that many students implemented different strategies when learning the language (i.e., grammar) section of English in comparison to the literature section, as illustrated by the following quotes,

Regarding the learning of language [i.e. grammar], I read over my notes. When learning literature, I try to understand the author, the time period, themes and quotes. (S.A. male, Form 6).

When learning literature, I learn key quotes, the purpose of the poems and I investigate the context of each short story on the internet. However, when learning for language I just read novels. (S.A. female, Form 6).

Reading was often complemented by writing when studying English. A South African female (Form 2) indicated that she wrote stories in her free time to develop her creative skills. Another student explained how he used both reading and writing to study literature, as follows,

With regards to learning English literature, I go through the text and then develop ideas in my mind. I then write a few notes and also do research on the internet about the authors. (South African male, Form 5).

Common to all the students when studying English grammar and literature at home was that they implemented an individual learning style. In this regard the following serves as an example of how the study strategies included investigation, test preparation and memorisation.

One way I learn literature is by doing research on the internet. I also look at the Cambridge mark schemes. I also learn quotes. I practise answers and then mark them myself. (S.A. male, Form 6).

It was clear from the responses that learning style preferences were context-specific, so that studying at home involved a different learning style than studying in the classroom. A common observation regarding their views of their preferred teaching methods was that they preferred teachers who gave clear and thorough explanations of difficult concepts, and offered constructive criticism on their work. This indicated how the students relied on an auditory learning style to construct their knowledge in class. The fact that they enjoyed their teachers' support is in line with socio-constructivist learning and a group-learning style (being paired with a teacher) which is in contrast to the individual learning styles they implemented at home. The student from Botswana (Form 4) preferred being paired with teachers who provided individual consultation and were willing to give private lessons. Most of the other top-achieving students enjoyed group-learning, namely they constructed their own ideas during class conversations and debates, and this facilitated reflection. One student said,

I like the English teacher because he does not give the answer straight away.... He allows us to talk and discuss the issues. He challenges us on points and feeds us pointers which give us directions to build our arguments.... He looks at sections of the work and asks for our opinions. (South African male, Form 6).

This kind of class conversation was sometimes enhanced by means of audio-visual methods which aided auditory and visual learning and which also facilitated 'hands on' experiences that benefitted the kinaesthetic learners. For example, an English teacher used YouTube movies and videos to explain a play being studied, and thereafter allowed the students to act out the play.

The students' views of teaching which did not work well in the English class with regard to both grammar and literature indicated how some teachers inhibited the construction of knowledge by creating an unsupportive learning environment. Examples were when the teacher deviated from the syllabus, constantly engaged in small talk so that little work was done in class, and seldom assigned or marked homework. Methods that relied solely on an auditory style were seen as ineffective. For example, a South African male (Form 6) explained how they were "bored stiff" by a teacher who read the lines one by one, continuously explaining what it meant. He suggested that to improve the delivery of

the English literature syllabus, this teacher should pick up on overall themes rather than labour through a poem line by line.

The students offered several suggestions on how the teaching of English grammar and literature could be improved. These included the use of a variety of methods to enhance interest and learning; the explanation of difficult concepts (appealing to their auditory learning styles); adding more notes on the whiteboard to help the students to construct their knowledge better and to improve their understanding of the work; the use of PowerPoint presentations and other audio-visual aids (supporting reading learning styles); encouraging the students to form groups in class to discuss issues and to express their personal views (allowing for group-learning); and clear feedback on written work which would support a reading style and aid constructivist learning.

6. Discussion of the results

Statistically, the demographic variables were significantly related to the students' achievement in English and their learning styles (RQ1). As Table 1 shows, the students performed their best during their second year at secondary school (Form 3). This may be on account of adaption issues they experienced during their first year at secondary school. The fact that younger students, who were in Forms 2 to 4, were significantly more auditory learners than the older students implied that they listened better in class than the older students. This could contribute to achievement. Longitudinal studies may shed further light on the impact of age. This could be a valuable contribution since several researchers identified changes in learning style with age: for example a study which reported significant differences in preferences for a visual and a reading/writing learning style between learners of different ages (Khanal et al., 2014).

With reference to nationality, this study found no significant difference in the achievements in English across the four nationalities included in the sample. Some researchers, however, indicated differences in the learning styles of learners of different nationalities (Ramburuth & McCormick, 2001; Barmeyer, 2004; Joy & Kolb, 2009). This may be related to the fact that these studies included greater differences in nationality and also culture (e.g., Eastern and Western), while this study consisted of only African nationalities of which the cultures may be relatively similar.

As regards gender, the girls in the sample performed significantly better in English than the boys in line with other studies that have ascertained that female students generally outperformed their male counterparts (Ahmad et al., 2011). This may be attributed to their superior linguistic skills, better working habits, and more effective study skills (Bhatti & Bart, 2013), or to the instruction and assessment methods of the teachers which favoured the learning styles of the girls (Dahlan, Noor & Hashim, 2010). Moreover, in this study, the females were more inclined to use a variety of learning styles (visual, reading, writing and individual learning), as illustrated by Table 2. Their application of all of these styles could help them to achieve better in English than the boys.

In this study the top achievers significantly more than the low achievers made use of an individual learning style in addition to reading, when studying English (RQ2). In contrast, the low achievers significantly more than the high achievers relied on kinaesthetic learning, as reflected in Table 3. Within the context of the study these results make sense: achievement in English could be improved by students who do a great deal of individual reading of English literature, among others, while restlessness in class, facilitated by an inability to concentrate, could be related to poor achievement.

An significant finding that emerged from the qualitative data is that it indicated how context influences learning style (RQ3). In class the students expected teachers to use a variety of methods that supported reading as well as kinaesthetic, auditory and group-learning styles, even though the students employed an individual and reading/writing style at home. Viewing auditory, reading and group-learning favourably has many advantages, as shown in a study that focussed on collaborative (group) strategic reading in class (Boardman, Moore & Scornavacco, 2015). Through collaborative reading students can learn how to apply the reading skills of others who are more skillful readers; they can participate in discussions about the text, thus improving their thinking and communication skills; and group structures and support allow equitable access to all the students.

Another notable result is that the learning styles of the high achievers were also influenced by whether they were learning English grammar or literature. When studying literature, they appreciated the use of audio-visual technology, such as YouTube videos. This is in accordance with researchers who have pointed out that video games, in particular, could be used with great success in secondary schools (Frost, Matta & Maclvor, 2015). Technology focuses the learners' attention (Bester & Brand, 2013).

7. Conclusions and recommendations

Since the study was limited to a small sample in one independent school the results cannot be generalised to all secondary schools in South Africa. In addition, the questionnaires and the interviews reflected the students' views of their own learning styles which may differ from the actual styles they employed. Follow-up observation studies may therefore be useful. Although these limitations are acknowledged, the study, nonetheless, makes a valuable contribution to the field of learning style and academic achievement in English within South African context. The study focussed on English as a core subject in South African schools and aimed to answer the following main research problem: *How can the teaching of English at school be enhanced in consideration of student learning style and classroom diversity?*

From the results, the following can be concluded: the students who were high achievers used a variety of learning styles to enhance their English literacy. This implies that the teachers should implement a variety of teaching styles in the classroom to the benefit of all students, regardless of nationality. To this end, male students are in need of coaching in the use of a greater variety of learning styles. In particular, English secondary school

teachers should ensure that classroom teaching allows for both auditory and visual learning, as well as learning in a group context. In the English literature classroom, the teacher should include teaching in accordance with a kinaesthetic style, such as role-play. However, learning English at home requires different learning styles than in classroom, namely individual learning by means of reading/writing. Homework assignments should be set accordingly.

More research to investigate students' learning styles and how these are related to achievement is needed. In particular, it is recommended that the following be explored: the use of audio-visual technology in the teaching of English to support both auditory and visual learning styles; the role of culture in learning style preferences; and the impact of age on learning style by means of longitudinal studies.

The results of this research have important implications for classroom teaching, as shown. Even though numerous factors impact on achievement, a consideration of students' learning styles in English is one way to improve their learning in South African classrooms. This is crucial in consideration of the key role of English as *lingua franca* internationally.

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