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Academic language proficiency of student teachers in a Namibian University

Author:
Frieda N. Shingenge[1,2]

Affiliations:
[1]Department of Education, Faculty of Education and Human Sciences, University of Namibia, Ongwediva, Namibia

[2]Department of Childhood Education, Faculty of Education, University of Johannesburg, Johannesburg, South Africa

Corresponding author:
Frieda Shingenge,
fshingenge@unam.na

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Background: Although students in teacher education programmes in Namibia study through the medium of English, their academic language (AL) proficiency remains a challenge for most of them. In the Junior Primary Education programmes, they are not only required to master AL for their own studies, but they must also learn how to teach emergent academic AL in the primary school.

Aim: This study aimed to address this dual challenge, a practitioner research study was undertaken to assess and compare students' AL proficiency skills in English cross sectionally in 2020.

Setting: The study was conducted online with (N = 78) student teachers at one of 12 campuses of the University of Namibia during the COVID-19 pandemic period.

Methods: A standardised test compiled by Uccelli et al. was administered to 78 randomly selected students to measure their core AL skills.

Results: The assessment results revealed distinct gaps in students' AL proficiency. In addition, the findings demonstrated a statistically significant variance in assessment outcomes across different year groups.

Conclusion: The university, despite provision of several courses, has taken note that AL should ideally be integrated across the curriculum.

Contribution: The study revealed usable evidence about students' AL proficiency, indicating patterns across cohorts.

Keywords: core academic language skills; junior primary; pre-service teachers; integrated curriculum; core academic language skills-1 test.

Introduction: Academic language and learning

Apart from natural language being an essential tool for communication, it is also crucial for teaching and learning. Specific language tools required for learning were first proposed by Cummins (1979, 1981). He distinguished between basic interpersonal communication skills (BICS) and cognitive academic language proficiency (CALP). He aimed to 'draw educators' attention to the timelines and challenges that second language learners encounter as they attempt to catch up with their peers in academic aspects of the school language (Cummins 2008:71). Therefore, if much of the discourse is on 'language for learning' in the terminology and discursive styles of different disciplines, it cannot be assumed that students at a Namibian university will have acquired or learned these discourses of the academy during their studies.

In university programmes, academic language (AL) competence is a powerful academic tool for learning, connecting ideas and serving as a gateway to understanding disciplinary vocabularies (Dehaene 2013, 2020; Lucas, Villegas & Freedson-Gonzalez 2008). For a country like Namibia, which adopted English as a language for learning after independence in 1990, and which used Afrikaans prior to independence (MoBESC 2003), the journey to this access has not been smooth for both teachers and learners. Studies of the school-leaving certificate results have reported that English stands out as the subject in which learners perform poorly (DNEA 2019; Makuwa 2005; Nakashole et al. 2013). Apart from these school-leaving statistics, it was further revealed that limited learning of English in the early grades, as well as the AL proficiency of the teachers in primary schools, may have an impact on leaners' academic achievement throughout their school careers (Julius & Hautemo 2018). The English proficiency of early grades learners from pre-school to 9 years is limited because the medium of instruction for most children is in their home language. Thus, apart from not developing BICS in English, they are also not introduced to academic

discourse in their home language, where the emphasis in the early grades is largely on communicative competence.

While engaging with the Junior Primary Bachelor of Education in Pre and Lower Primary Honours (BEd) student teachers at a Namibian University where I teach, I became aware of how students experience challenges with the use of AL in English when they express themselves orally and in writing and reading academic texts. I decided to embark on an inquiry of students' 'core academic language skills' (CALS) to find out what some of the specific challenges of AL may be. Uccelli (2019:8) defined CALS as 'a constellation of the high-utility language skills that correspond to linguistic features prevalent in oral and written academic discourse across school content areas and infrequent in colloquial conversation'. These skills are hypothesised to support academic reading across discipline areas and are vital to 'chart school-relevant language proficiency' (Uccelli et al. 2015:338). In this article, 'school relevant language' is the AL required to engage successfully in academic tasks at primary school and – also at the university level, where several programmes of study are aimed at primary school teaching. *The concept of AL*, in this study, refers to 'the language used in school (and in higher education institutions) to help students acquire knowledge' (Anstrom et al. 2010:iv). Schleppegrell (2004, 2012) regards AL as the backbone of most linguistic demands for learning in written and spoken academic performance. This is also what Uccelli et al. (2019:8) emphasises as children not only learn language but 'learn how to learn through a language'. In agreement, Snow (2010:328) refers to AL to include 'language of education, language for schooling, science language and academic English', with distinct AL features such as the purpose, discipline topic and the mode which it is utilised. Nagy and Townsend (2012) define AL as the specialised language that students would need to have developed for communication in academic settings, which includes schools and specifically the texts that school learners are required to read (Arends 2022).

Although the focus of my inquiry is on university students, I am aware that they are not only learning how to use AL for the purposes of their university studies, but also for use in their future career. As future teachers of AL in the lower grades of the primary school, whether it is in English (at private schools and schools that use English as a language of teaching) or in children's home language (in public schools) they must develop AL for various contexts. There are many linguistic demands of teaching and of learning in this regard, the challenges of which must be faced in teacher education (Schleppegrell 2012). I concur with this view. I believe that student teachers can learn to be exemplary models of AL and learn to use suitable academic vocabulary and syntax to communicate with young children as teachers in their future careers. They can invoke the type of language that the learners will encounter in the content of subjects such as mathematics, natural sciences and the social sciences of the early grade's curriculum. For this to happen, the pre-services teachers must be able to mirror logical, scientific reasoning and explain concepts and skills in a way that will help children to see how the world works and how language is used as a tool to make sense of the world. The type of language competence that prepares young learners for studying topics involves more than the narrative style to which early grade learners are accustomed (Heller 2020). I argue that teachers must model expository and argumentative language that learners will require for learning from expository and argumentative texts in the middle primary school curriculum.

Aukerman (2007) refers to this type of language as *decontextualised language* because there is no pre-existing, shared social context that learners can rely on to figure out the meaning of texts. It is assumed that students at university, and learners in schools, will learn academic discourses by exposure and concomitant instruction. Although that happens to students who have had the advantage of effective schooling in a language that they use consistently, some students in the Junior Primary programmes at the university where I work are not ready to read academic texts fluently and some struggle to use academic discourse for writing successfully. For example, they write essays without thesis statements, copy others' work when they do their assignments and plagiarise from the internet. This is evident from comments made by their lecturers and in the written assignments that they submit (R. Hangala, pers. comm., 15 September 2022).

Although students enter the university with limited academic discourse skills, they are expected to participate in the new 'global' educational communication. Even though they have spent 12 years in school, their AL proficiencies are, 'stunted, inflexible, isolated and anaemic' (Bain 2006:2086). To address the issue of AL in school (and in other institutions) Paola Uccelli and her colleagues developed an assessment tool to measure middle school learners' AL skills (Uccelli et al. 2015; Uccelli, Barr & Galloway 2016). I argue that this is the minimal skill sets the teachers would require to teach in a primary school and to use in their education at university.

Core academic language skills – 1 instrument

Uccelli et al. (2015), refer to research that has indicated that mastery of a set of CALS supports reading comprehension (Nagy & Townsend 2012). The test was used to assess students in the education program and not really to assess their education and academic skills. (Mort 2022; Roberts 2022). In one example of this type of inquiry at a university, Van Der Merwe (2018) found that students' proficiency scores were insufficient to prepare them to teach learners in the various components of the primary school curriculum. In Van Der Merwe's cross-sectional study of student teachers, it was also evident that the students lacked AL proficiency – not only for their own studies but also to teach and to model AL.

On a larger scale, the CALS-1 test is also used by several universities in South Africa as part of the Primary Teacher Education (PrimTed 2021). From their report, results showed that 'urban' universities performed better than 'rural' universities. This is somewhat self-explanatory as urban university students are generally more proficient in English than their rural counterparts (Primary Teacher Education 2021).

A study of teacher preparation to teach English Language Learners (ELLs) students in the US found that most of the pre-service teachers are not well-prepared for practice teaching because they lacked preparatory coursework, including the specific strategies to meet the literacy and learning needs, especially of English Second Language (ESL) students (Correll 2016). This could be the same reason why, in Namibia and elsewhere, many secondary school learners lack the required academic proficiency (AP) in English, which is the language for teaching and learning (DNEA 2019) in higher education in the country.

Neugebauer and Heineke (2020) and Snow, Griffin and Burns (2005) call for a systematic and intensive preparation of the teachers if they are to meet the educational language needs of the learners whom they will teach. This preparation needs to be approached in a coherent manner, where knowledge needed for both formal and academic contexts should include knowing the learners' cultural and linguistic background. I argue that this knowledge should be *embedded* in curricula of the university where I teach for the students to develop and practice these skills and achieve the required levels of language and literacy.

In a study of the language proficiency skills of students at the University of Namibia (UNAM), Izaks (2016) examined the vocabulary and academic literacy levels of first-year undergraduate students and found that their proficiency was limited. Through coaching and guidance, the student's proficiency improved. Izaks' study emphasised the importance of intensive academic literacy training and exposure to guided writing to assist students develop AL skills. In another study, Liswaniso and Mubanga (2019) examined reading habits of UNAM undergraduate first-, second-, and third-year students in the BEd primary education programme at one campus. The findings revealed low reading habits among the students, and this implied limited CALP as students were less likely to interact with reading materials needed to complete their assignments. This was also indicated by their lecturers who revealed that students mostly read to prepare for tests and examinations and spend less time reading when completing tasks.

In the research literature there is evidence that suggests that teachers need to teach AL intentionally and explicitly – even in the early grades (Bailey, Burkett & Freeman 2008; Chamot & O'Malley 1994; Schleppegrell 2012, 2020; Uccelli, Dobbs & Scott 2013). For teachers to do this, they themselves need the skills of AL, how it is taught and how it is used across disciplines. Lucas et al. (2008), as cited in Schleppegrell (2012:409) propose that more attention be paid in teacher education to prepare teachers to support the development of the AL of their learners.

Theoretical framework

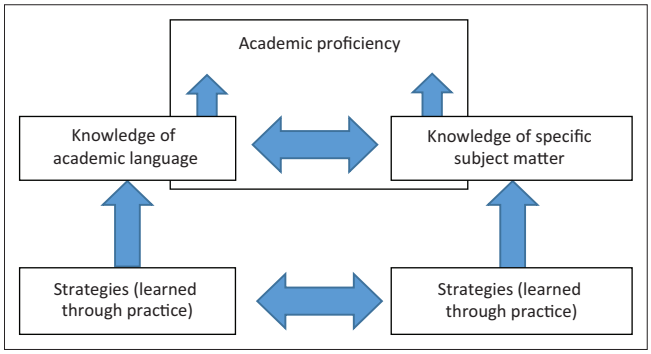
This inquiry was informed by the Krashen and Brown (2007) model of AP. This view holds that language is learnt by immersion, consistent exposure and by using it to understand messages that are communicated and to formulate such messages. The Krashen and Brown model (2007) is useful as a lens to understand one's own practice and how students acquire AL especially if amplified by a variety of views from AL specialists. Along with the research of Chamot and O'Malley (1987) and the work of Cummins (1979, 1981, 2000, 2001), the model of overall 'AP' (Krashen & Brown 2007) reflects an underlying premise, namely that learning and language use happen in tandem (Grøver et al. 2019). Figure 1 shows how AP is characterised by (1) AL and by (2) subject content knowledge.

In their model the authors refer to 'academic language proficiency', for which I have adopted and designed a diagram (Figure 2).

The model also includes strategies for the use of AL and for eliciting subject knowledge. I would argue that such strategies are built by practice and repetition and that some also rely on suitable *instruction* as well as sociocultural educational experiences. The authors set out basic assumptions about what constitutes AP:

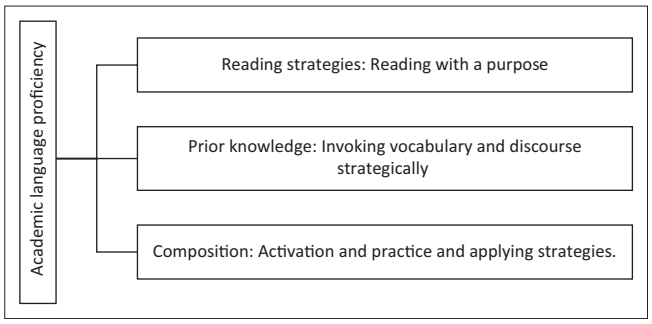
- *Knowledge of academic language*: This is knowledge of the special language used in school and at institutions of higher education.
- *Knowledge of specialised subject matter*: This consists of knowledge of mathematics, science, history, etc. (Krashen & Brown 2007:1)

Krashen and Brown (2007) and Krashen (2018) also propose that there is a third component to AP, namely *strategies* such as reading for a purpose. This aspect of AP includes competence in the use of strategies that aid in the acquisition of AL and in subject matter learning. This could be the reason



Source: Krashen, S. & Brown, C.L., 2007, 'What is academic language proficiency', *STETS Language & Communication Review* 6(1), 1–5, viewed n.d. from https://joanwink.com/research/Krashen-Brown-ALP.pdf

FIGURE 1: Academic proficiency.



Source: Adopted from Krashen, S. & Brown, C.L., 2007, 'What is academic language proficiency', *STETS Language & Communication Review* 6(1), 1–5, viewed n.d. from https://joanwink.com/research/Krashen-Brown-ALP.pdf

FIGURE 2: Academic language proficiency.

why some students may lack AP. Use of strategies does not guarantee success, but they can have a powerful effect on both language development and learning subject matter (Krashen & Brown 2007:1). This model emphasises ways to go about practicing the strategies that can build AP. I argue that these strategies require instruction and assessment feedback.

As future teachers, students would need vocabulary and discourse knowledge to be able to express knowledge in the typical genres of academic discourse. For example, the modalities of writing and talking, subject discipline, medical science would not be the same; even though they may share some general skills, such as those assessed by the CALS-1 test (Uccelli et al. 2015) there are nuanced differences of expression. Krashen and Brown (2007) propose two components for the analysis of AL:

- Academic language's complex syntax, academic vocabulary and a complex discourse style. They argue that *many educators believe that AL can be analysed and taught directly*, but they propose that this is an empirical question that remains open to inquiry.
- They also propose that different disciplines may differ in their typical discourse and genres in the academic register. As such, the language and conventions of a primary school science text would be different to the style of a history text.

Krashen and Brown (2007) propose two hypotheses for comprehending and for composing AL:

- The *Comprehension Hypothesis* which proposes that humans acquire language and develop literacy by understanding messages, not by consciously learning about language and not by deliberate memorisation of rules of grammar and vocabulary (Krashen 1981, 2003). My response to this hypothesis is that AL for different subject areas has several different requirements. In equations in physics, for example, some initial *teaching* is required and interaction between a teacher and a learner would be crucial to teach the conventions of the language of physics. I would argue that this is the case across subject areas.
- The *Problem-Solving Hypothesis* which claims that we do not learn subject matter and new concepts by '*study*ing'; that they are the outcome of problem-solving. In response to this hypothesis, I would argue that certain linguistic foundations have to be laid in the language or discourse of a subject area to scaffold the solving of problems. The well-known example of mathematics word problems comes to mind, whereby some young children can easily solve a problem if it is presented in Arabic digit notation, but when it is posed in terms of language, the problem is not understood – the 'message' of which Krashen makes mention is not understood (Dlamini 2021).

Considering these hypotheses and the nature of AL, Krashen and Brown (2007) further propose an approach, which they refer to as 'narrow reading'. The approach suggests that similar texts or authors be read together and repetitively, to ensure the stable development of specific vocabulary and language structures (Krashen 2004) in what is described as 'natural repetition'. Krashen (2018) maintains that 'narrow reading' is an important pedagogical tool. However, the crucial role of reading in a student's development of AL, although important, is not sufficient for students who are trying to master AL and doing so from a reasonably low base of English. They do need some bridge between their language competence and the knowledge they wish to access (Henning & Van Rensburg 2002). In Vygotskian terms (Vygotsky & Cole 1978), they require a dual 'zone of proximal development' – as they learn the subject content, they also learn the language of its academic discourse. Here, the students would need an Educator who would guide them to develop their language to be competent in the language of learning.

Aim of study

The UNAM, is one of the public universities. It has 12 campuses across the country. The study was conducted at one campus of UNAM. The aim of the study was to answer 'what are the AL proficiencies of first-, second-, third-, and fourth-, year student teachers according to a specific CALS-I test developed by Uccelli et al. (2015)'?

The sub question was:

- How do BEd Pre and Lower Primary education students perform on the CALS-I test?

Research methods and design

The sample of this study consisted of 78 student teachers who were randomly selected from a population of $N = 450$ (Babbie 2020; eds. Merriam & Grenier 2019). For this purpose, I used a class list and because the confidence level was below 15, every 12th student was chosen to form part of the study. The students were selected cross sectionally across year groups of four cohorts from first-, second-, third- and fourth-year students. Because the study aimed to assess the students' AL skills, CALS-I (Uccelli et al. 2015) was administered.

The test was not administered in its original in-person format that would have an administrator read the test items to students. Because of the COVID-19 pandemic that restricted social contact, the students took the test online, which was open for 4 weeks. In this modality, the students had to firstly, read the instructions, then secondly, practice the examples, imagining that an absent test administrator was speaking these words. Thirdly, they had to shift from these 'utterances' to the actual items of the test. The scores from the CALS-1 instrument provided usable evidence about students' AL proficiency, indicating patterns across cohorts.

The test has seven sections or domains testing different skills as shown in Table 1.

The various test items will be discussed in what follows:

- In total, there were nine tasks. The first task the students had complete sentences using connectors such as nevertheless, although etc.
- The second task expected students to track themes of underlined words in sentences and select the best option for the person and/or thing or event.
- The third task required students to sequence ideas in sentences.
- The fourth task required students to change word form to complete sentences.
- The fifth task required students to match pictures to sentence.
- The sixth task required students to identify definitions.
- The seventh task, required students to analyse text and determine whether the writer is sure or unsure.

TABLE 1: Core academic language skills-I domain and skills measured.

CALS domain	Skills measured
1. Unpacking dense information	The potential to easily comprehend and use complex words and sentences that smoothen communication (e.g. *nominalisation, embedded clause and expanded noun phrases*).
2. Connecting ideas	The potential to comprehend and use 'connectors' that are commonly used in academic texts to connect relationships between ideas (e.g. *consequently, on the one hand …, on the other hand*).
3. Tracking participants' ideas	The potential to identify or produce terms or phrases that are used to typify and relate to same participant or theme throughout an academic text (e.g. *water evaporates at 100 degree Celsius. This process …*)
4. Organising analytic texts	The potential to organise precise texts, especially argumentative texts, based on a particular academic structure (e.g. *thesis, argument, counterargument, conclusion)* and paragraph language structures (e.g. compare, construct, problem and/or solution).
5. Understanding metalinguistic vocabulary	The potential to understand exact meaning used for a particular language to visualise both thinking and reasoning as referred to as metalinguistic vocabulary (e.g. *hypothesis, generalisation, argument*).
6. Understanding a writer's viewpoint	The potential to understand or use makers to indicate the writers view point more especially the '*epistemic stance makers*' that show the writes degree of sureness in connection to a claim (e.g. *certainly; it is unlikely that*).
7. Recognising academic language	The potential to recognise more academic language when districted with a more everyday language in communicative contexts where academic language is highly regarded (e.g. *more academic vs. more colloquial definitions of nouns*).

Source: Uccelli, P., Barr, C. D. & Galloway, E. P., 2016, *Core Academic Language Skills Instrument (CALS-I)*, viewed 29 December 2022, from https://admin.jet.org.za/clearinghouse/projects/primted/resources/language-and-literacy-resources-repository/uccelli_2016_ies_cals_report-1.pdf/@@download/file/Uccelli_2016_IES_CALS_Report.pdf

CALS, core academic language skills.

- The eighth task required students to read for comprehension.
- The last task required students to provide definitions.

Analysis: Making meaning of the test results

To address the research question, '(What are the academic language proficiencies of first-second-, third-, and fourth-, year students' teachers according to the CALS-I test?)', I used descriptive analysis to see how students performed and to describe the trends of their competence cross sectionally. Various authors describe this type of design (Creswell et al. 2011; Loeb et al. 2017) as a design that captures information simultaneously from participants who come from different sections. Kumar (2018:93) explains that cross-sectional studies are sometimes referred to as 'one-shot' or 'status' studies that involve data at the same time, but with a variety of relevant sources.

To begin with, the responses from the CALS-I test were automatically recorded on a Google-docs form and then transferred to an *excel* sheet. Prior to the analysis, the data coding of responses and analysis were prepared from the google form. In this process, I identified, classified and assigned a numerical, stating whether correct or incorrect. Upon completion, the data were then entered onto the Statistical Package for Social Science (SPSS) (Pallant 2020).

With the help of a statistician the CALS-1 data were then statistically analysed. To ensure that the analysis that had been proposed was correct, I consulted with the statistician to help determine, which statistical tools to use to address the first research question.

For the analysis of the test data, the design first included basic descriptive statistics, followed by a test for normality and a comparison of the two groups – Group A and Group B. The four individual cohort groups were too small for relevant statistical work; therefore, they were regrouped into Group A (1st and 2nd year students) and Group B (3rd and 4th year students).

Ansaloni, Bonzini and Pozzi (2010) provided a foreground as a basic tenet of quantitative research: For data analysis to be reliable, it must be built upon the foundation of 'clean data'. I scrutinised the data by checking the results per student and used the corrected entries, before proceeding with descriptive statistical work. I used the descriptive analysis to address the research question as proposed by Meyers et al. 2013. The sample from the two groups, as well as the variables that were the same across the groups, were going to be tested, obtaining descriptive statistics on the variables.

The basic statistical analysis aims to describe the overall performance of the students on all the variables. I also planned to investigate the normality of the data distribution.

Approval to carry out this study was sought from the Ethics Committee of the University of Johannesburg. Another

approval to conduct research was also given by the research ethics committee at the UNAM where the study took place. The researcher sought informed consent from all the participants.

Ethical considerations

Ethical clearance to conduct this study was obtained from the University of Johannesburg Faculty of Education Research Ethics Committee (No. REC-110613-036).

Results: Students' core academic language skills

The descriptive statistics showed the scores per task and the overall scores for each group. The overall scores for the two groups are presented in Table 2.

Table 2 shows that the mean CALS-1 test score is 54.79, suggesting that on average the participants have scored 54.79. Also, the 95% interval of confidence for the mean is from 51.01 to 58.57; this suggests that, based on this study, as a researcher, I am 95% confident that the mean lies between 51.01% and 58.57%. Moreover, the mean score obtained after discarding 5% from both upper and lower end is 54.91, suggesting that, with 90% of the participants the average performance of the students in the assessed task is 54.91%.

Regarding the findings on the spread of the scores, the minimum value for the scores is 29, whereas the maximum is 80 giving a range score of 52 points. This suggests that the scores of Group A students are *widely spread* – by 52 points from the lowest to the highest. The value of interquartile range, is 11, suggests that for Group A students, the upper quartile is far from the lower quartile by 11 points. This is not an unexpected result, because the student sample is known to represent students with not only varied AL skills but also with varied general English competence.

TABLE 2: Descriptive statistics of the results of the CALS test for the two groups.

Groups		Sig.level
Group A: 1st & 2nd year BEd honours		
Mean	54.790	1.852
• Lower bound	51.010	-
• Upper bound	58.570	-
5% Trimmed Mean	54.910	-
Median	56.060	-
Variance	106.382	-
Std. Deviation	10.314	-
Minimum	29.000	-
Maximum	80.000	-
Range	52.000	-
Interquartile Range	11.000	-
Skewness	-0.128	0.421
Kurtosis	1.107	0.821
Group B: 1st & 2nd year BEd honours		
Mean	59.930	1.976
• Lower bound	55.950	-
• Upper bound	63.910	-
5% Trimmed Mean	60.480	-
Median	60.610	-
Variance	183.536	-
Minimum	13.548	-
Maximum	21.000	-
Range	85.000	-
Range	64.000	-
Interquartile Range	18.000	-
Skewness	-0.756	0.347
Kurtosis	0.677	0.681

Sig., significant

The skewness value is 0.128, which according to Pallant (2007), is a symmetric distribution. It is therefore reasonable to assume that for the Group A students the scores draw closer to a normal distribution. This is also supported by the value of the kurtosis, which is 1.107. Therefore, based on the data presented in Table 2 one can arguably conclude that there was some normality. These findings were also triangulated with the statistical tests for normality.

The more senior students showed somewhat different scores.

The data from Table 2 show that the mean CALS-1 test score is 59.93%, which is 5.14 higher than the Group A's. Also, the 95% interval of confidence of the mean is from 55.95 to 63.91, indicating that, based on this study, one can be 95% confident that the mean lies between 55.95% and 63.91% for Group B. Moreover, the 5% trimmed mean is 60.48, which is slightly higher than that for the Group A's. This indicates that for 90% of the participants (5% trimmed from both lower and upper ends each) the average performance of the students in all assessed tasks is 60.48.

The distribution of scores for both groups are shown in Figure 3 and Figure 4.

From these results it was evident that the pattern of the outcomes was out of the normal curve range, which required the use of a test for normality.

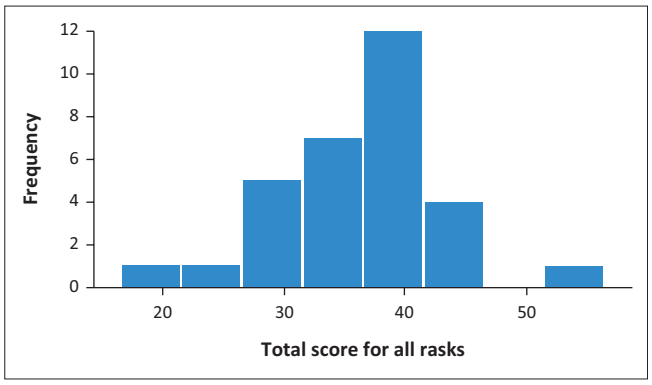
Test for normality

Because the groups had fewer than 50 participants each, the Shapiro–Wilk test for normality was used. Table 3 shows that there were only a few task results that showed normality – with a < 0.005 value.

To be able to compare the results of the two groups, a non-parametric test had to be used, because of the normality results. For this the Mann–Whitney test was used to compare the variables.

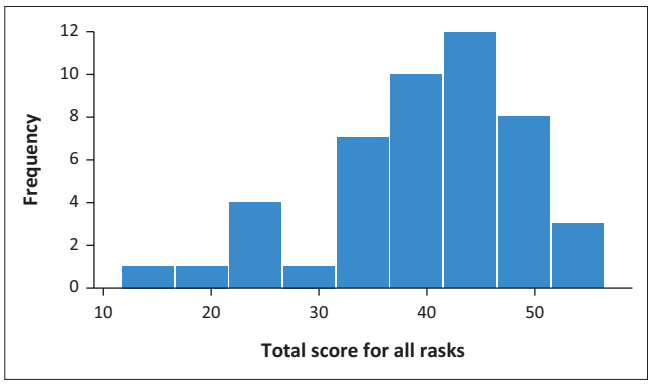
Comparison

Table 4 was formulated with the Mann–Whitney test to compare the variables by showing the difference of students' competence of Group A and B. It is evident from the table that each group performed best in Task 4, which is 'breaking words' and most weakly in Task 9, which was 'defining words'.



Note: Mean = 36.16; Standard deviation = 6.807; N = 31.

FIGURE 3: The distribution of results for Group A -Histogram for r year group = 3rd and 4th year BEd honours.



Note: Mean = 39.55; Standard deviation = 8.941; N = 47.

FIGURE 4: The distribution of results for Group B -Histogram for r year group = 3rd and 4th year BEd honours.

The scores were also represented on boxplots for each task. Examples of these are depicted in Figure 5 and Figure 6. I include examples of these boxplots because they show the spread of scores per task, per group at a glance. The figures show some noteworthy variation within and across the groups per task. The constructs for Task 1 and Task 2 were connecting ideas logically and tracking participants' ideas.

Task 9 assessed recognition of academic register and understanding metalinguistic vocabulary. This task yielded results of which the AL development course designers need to take note.

Discussion and conclusion

The aim of the study, was, to measure and compare the AL proficiency of Junior Primary BEd student teachers according to the CALS-1 instrument. At the outset of the study, I formulated a hypothesis that the student teachers' AL data would show improvement across the four cohorts. However, this hypothesis was not confirmed. Group B achieved a score of 59.93% as opposed to Group A, which scored 54.79. Although Group B did perform somewhat better than Group A, the results indicated that the senior students' proficiency had not improved *markedly* when compared to the junior students. The data showed only a difference of 5.14% between the performance of Group A and Group B.

TABLE 3: Test for normality.

Shapiro–Wilk Year group	Statistic	*df*	Sig.
Total_T1			
1st and 2nd year BEd	0.915	31	0.018
3rd and 4th year BEd	0.933	47	0.010
Total_T2			
1st and 2nd year BEd	0.920	31	0.024
3rd and 4th year BEd	0.876	47	0.000*
Total_T3			
1st and 2nd year BEd	0.945	31	0.115
3rd and 4th year BEd	0.953	47	0.058
Total_T4			
1st and 2nd year BEd	0.662	31	0.000*
3rd and 4th year BEd	0.678	47	0.000*
Total_T5			
1st and 2nd year BEd	0.807	31	0.000*
3rd and 4th year BEd	0.860	47	0.000*
Total_T6			
1st and 2nd year BEd	0.755	31	0.000*
3rd and 4th year BEd	0.445	47	0.000*
Total_T7			
1st and 2nd year BEd	0.883	31	0.003
3rd and 4th year BEd	0.957	47	0.079
Total_T8			
1st and 2nd year BEd	0.883	31	0.003*
3rd and 4th year BEd	0.916	47	0.003*
Total_T9			
1st and 2nd year BEd	0.667	31	0.000*
3rd and 4th year BEd	0.572	47	0.000*
OverallTotal			
1st and 2nd year BEd	0.977	31	0.738
3rd and 4th year BEd	0.958	47	0.089
OverallPercentage			
1st and 2nd year BEd	0.977	31	0.738
3rd and 4th year BEd	0.958	47	0.089

T, task.
*, Below 0.005.

The study's results are somewhat disturbing. One would expect that adult student teachers attending a degree programme in which the medium of instruction is English would perform well in a school-relevant language test for middle schoolers. Also, considering that they had been engaging in English language courses in various parts of the teacher education programme, one would expect their scores to be higher. It is also notable that the senior group, which was expected to have developed skills after 3 or 4 years in the university programme, did not perform significantly better than the group in the first and second year of study.

My study showed that students' year level is only partially a predicator for AL competency as I had hypothesised. There were also some anomalies; there were tasks in which students in Group A performed better or the same as Group B students – for example, in Tasks 3, 4, 6 and 9. It could be that the students had forgotten some of the academic skills that were taught in the English language courses, or, rather, that they lacked *guided practice* to use AL skills *consistently* as a strategy proposed by Krashen and Browne (2007) to aid AL competency.

Task 9 assesses 'the degree of adhering to academic register expectations'. The sample of this study did not demonstrate

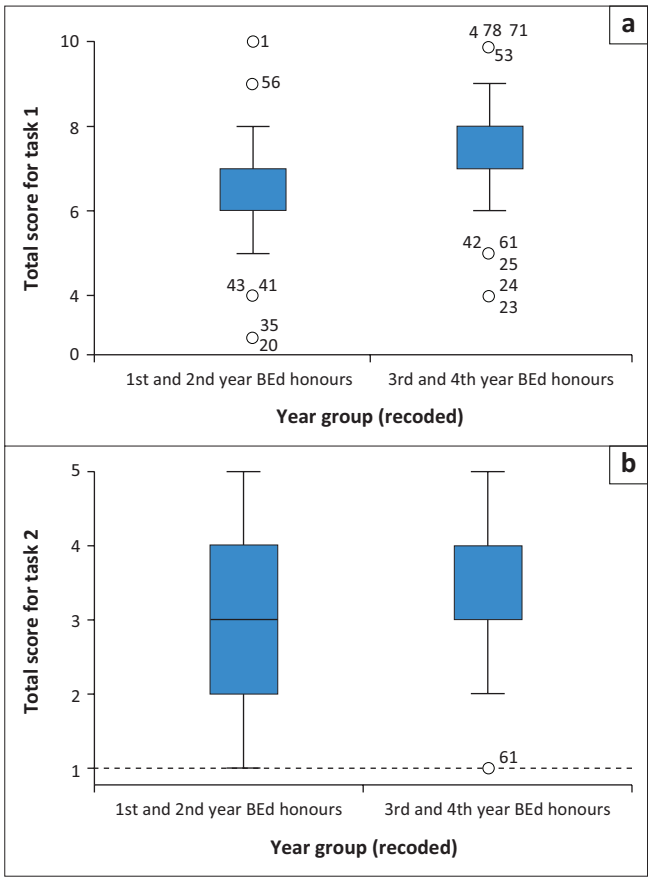


FIGURE 5: Test score distribution of (a) task 1 and (b) task 2.

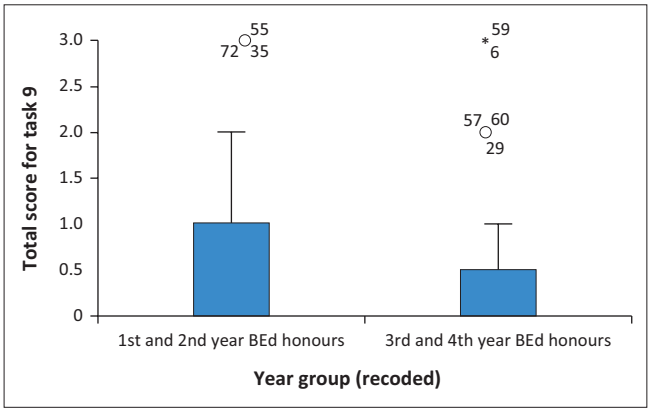


FIGURE 6: Test score distribution of task 9.

this competence. This is an important skill, needed for both reading and writing academic texts, and is emphasised by Uccelli and Galloway (2016). The authors say that the establishment of this skill takes time, effort and much practice to develop. I argue that writing practice and, with that, consistent reading, are required to develop a *sensitivity* for the academic register. These are the views of Heller (2020) too.

Upon reflection of what the Krashen and Brown (2007) model suggests, it is evident that, although the students engaged in AL-related coursework, they may not have practiced sufficiently with relevant content to develop the competency needed to teach learners in future. A

TABLE 4: Comparison between groups.

Year group	Group statistics				
	N	Mean	Standard deviation	Mean rank	Median
Total_T1					
1st and 2nd year BEd honours	31	6.26	1.548	29.11	6.00
3rd and 4th year BEd honours	47	7.40	1.455	46.35	8.00
Total_T2					
1st and 2nd year BEd honours	31	3.06	1.093	33.55	3.00
3rd and 4th year BEd honours	47	3.53	0.975	43.43	4.00
Total_T3					
1st and 2nd year BEd honours	31	8.10	2.534	41.27	9.00
3rd and 4th year BEd honours	47	7.51	3.922	38.83	8.00
Total_T4					
1st and 2nd year BEd honours	31	8.58	3.063	35.03	10.00
3rd and 4th year BEd honours	47	8.83	3.547	42.45	10.00
Total_T5					
1st and 2nd year BEd honours	31	1.29	0.902	33.95	2.00
3rd and 4th year BEd honours	47	1.74	0.966	43.16	2.00
Total_T6					
1st and 2nd year BEd honours	31	2.23	0.990	32.13	3.00
3rd and 4th year BEd honours	47	2.72	0.713	44.36	3.00
Total_T7					
1st and 2nd year BEd honours	31	2.68	1.423	31.65	2.00
3rd and 4th year BEd honours	47	3.66	1.809	44.68	4.00
Total_T8					
1st and 2nd year BEd honours	31	3.26	1.094	33.21	3.00
3rd and 4th year BEd honours	47	3.74	1.224	43.65	4.00
Total_T9					
1st and 2nd year BEd honours	31	0.71	1.101	42.40	0.00
3rd and 4th year BEd honours	47	0.40	0.798	37.59	0.00
OverallTotal					
1st and 2nd year BEd honours	31	36.16	6.807	32.10	37.00
3rd and 4th year BEd honours	47	39.55	8.941	44.38	40.00
OverallPercentage					
1st and 2nd year BEd honours	31	54.79	10.314	32.10	56.06
3rd and 4th year BEd honours	47	59.93	13.548	44.38	60.61

T, task.

prerequisite to reading academic text is the *purpose* of reading, namely to advance one's knowledge of subject content. In a university programme, reading is generally for the purpose of learning about a specific topic and for building discursive competence (Seligmann 2011). It could be that, the texts used in English language courses are randomly selected and chosen for the purpose of simply practicing a specific language skill and not for learning new content – or, ideally for both. I argue that students need to use texts for meaning making in a way that will help them to understand both the language and the subject knowledge (Schleppegrell 2020). This way, they will be able to further develop this to the learners they will teach.

The second component of the Krashen and Brown (2007) model refers to the very basics of reading with understanding – prior knowledge, vocabulary and discourse play a vital role in reading. As *input* for AL, reading can contribute to content knowledge, to an increase in vocabulary and to knowledge of the structure of language and –thus, to linguistic knowledge, which Cummins (2007:798) refers to as 'distinct language skills'. I would suggest that the initial process of engaging

with print is repeated in reading of text with many unfamiliar words and phrases until reading of disciplinary texts comprising these words, phrases and also syntax are automatised and stored in long-term memory for recall when triggered (Dehaene 2009, 2013). If words and phrases and typical sentences and clauses in AL are familiar to a reader, AL competence firmed up in memory are easily recalled. I agree with Krashen and Brown (2007) and Brown (2018) that, what they refer to as 'narrow' reading, can accelerate the learning of new terms and new linguistic structures, or 'distinct language' (Cummins 2008).

The participants in this study displayed low performances across all skillsets, suggesting that they had not had sufficient immersion and exposure to the conventions for spelling, punctuation conventions and use of AL to activate the language resources for meaning making. This may be attributed, partly, to the extent of knowledge of everyday English itself. I propose, however, that they may not have had sufficient opportunity to engage in 'narrow' reading, or in academic '*guided reading*' in the various disciplines that they study.

The Krashen and Brown (2007) model, which I adjusted to firstly, emphasises the *bi-directional* influence of AL and disciplinary knowledge and secondly, shows that the strategies for both can be learned from *instruction,* while some of these may be acquired in a non-deliberate way by sustained reading (Cummins 2007; Fillmore 1997; Fillmore & Snow 2000). Much as Krashen (1982) has emphasised 'immersion' in language and the 'acquisition' of language by exposure, I argue that students in this study clearly require much more (formal) learning of language structures by getting acquainted with rules and conventions and by systematic instruction in ESL. I argue that instruction is a much needed, powerful modality to augment sustained reading (Snow & Uccelli 2009). Lacking some of these core skills of AL for future teachers has implications as they would be required to use and interact in this discourse. Firstly, for their own degree courses and secondly, to use it and teach and develop it in the children they would teach.

Finally, the results revealed that the students did not acquire sufficient skills needed to apply. AL hence, they would to a large extend struggle to teach AL to learners in schools. Learning is a continuum activity and as students engage with more new and challenging educational texts and resources they would need continuing support for AL development. The university needs to address this matter, to ensure that future teachers are well-equipped to develop AL skills deemed essential for reading comprehension and also for writing composition.

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Author's contributions

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Data availability

The data that support the findings of this study will be openly available in the University of Johannesburg repository at https://www.uj.ac.za/library/information-resources/e-theses-and-dissertations/.

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