Support Strategies for Scaffolding Students' Acquisition of Academic Literacy Skills: Experiences at a University of Technology

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Abstract

Literature abounds on the reasons for students' high failure and attrition rates, and low academic output and throughput rates in South African universities. While a number of reasons explain this situation, there is copious research that emphasises the fact that second-language students' poor academic literacy (AL) is at the heart of this situation. What is most needed is sharing of intervention strategies that higher education institutions use to enhance students' AL. This study reports on AL challenges that students face at a South African University of Technology and intervention strategies that AL lecturers and those teaching literacy-related subjects employ in promoting students' learning. Scaffolding theory informed this study. Results collected through semi-structured interviews were analysed thematically. They revealed that although students encountered a number of AL-related challenges, providing them with interventions scaffolded AL acquisition. Results further showed that adopting an institution-wide collaborative approach helped to improve students' AL skills. The author recommends that universities should share best practice examples, as this adds to existing knowledge and assists other institutions that deal with AL challenges. Furthermore, students' life experiences and immediate environments should be incorporated in scaffolding their AL skills. Evaluation of interventions should be made to determine efficacy.

Keywords: academic literacy, intervention strategies, scaffolding, support, challenges, second-language learning

Introduction

The advent of democracy in South Africa in 1994 brought 'massification' of higher education (Kraak 2000), as more students, including those who had limited or no access to higher education began to flock to higher education institutions (HEIs). However, improved access did not translate into high success rates. There is a plethora of literature on high access and disproportionately low outputs and throughputs in South African HEIs at both undergradduate and postgraduate levels (Council on Higher Education (CHE) 2013a, b; Fisher & Scott 2011; Mabelebele 2012; Parry 2012). Several reasons explain this situation, including material factors in the form of financial constraints caused by low socio-economic status of students (Cosser & Letseka 2009; Letseka & Breier 2008; Letseka & Maile 2008); insufficient state funding in the form of the National Student Financial Aids Scheme (NSFAS), loans and scholarships (Badat 2009; Botman 2009; Mokgalong 2009) and delays in the disbursement of state funds (Fransman 2009; Mabelebele 2012). These delays lead to students taking part-time jobs to supplement their meagre financial resources (Letseka & Maile 2008; Price 2009), resulting in negative consequences for outputs and throughputs. In addition, there is consternation in South Africa about lowering of education standards at matriculation level by the Department of Basic Education and Training. Consequently, a gap between what the students learnt at high school and what they are expected to learn and master at university is widening.

Internationally, there is research to support the view that language proficiency is one of the most important factors in the students' academic success or failure (Adeyemi & Adeyemi 2012; Fakeye & Ogunsiji 2009). Stephen, Wellman & Jordan (2004) echo this view, arguing that 'high levels of English language proficiency are a critical factor in achieving academic success' (p.42). However, for second-language (L2) students, the articulation gap may be more pronounced, leading to them experiencing difficulty with engaging meaningfully with the learning and teaching discourses. Van Dyk & Weideman (2004) confirm this view, arguing that for L2 students, coping with university subjects in which advanced academic literacy (AL) skills are required becomes a much bigger challenge than for home-language (L1) students. Lewis (2004) & Tyobeka (2006) also express general concern regarding the literacy levels and educational attainment of learners who learn through English L2 in South African schools. This situation implies that L2

students' poor AL could be the root cause of their academic challenges that can lead to low outputs, throughputs and success rates.

Butler (2013) & Brady (2013) highlight the vulnerability of students who lack AL. In South Africa, vulnerability of students who study through L2 is likely to be prevalent and may be perpetuated by the fact that in this country, there are eleven official languages spoken in nine provinces. These languages include English, Afrikaans, IsiZulu, IsiXhosa, IsiNdebele, Siswati, Tshivenda, XiTsonga, Sesotho, Setswana and Sepedi. Whereas these languages should ideally maintain the same official status, the languages of learning and teaching (LoLT) in the majority of South African universities are predominantly English and, to some extent Afrikaans in a few universities. Yet, neither English nor Afrikaans is a home language to the majority of students in this country. Reiterating this fact, Butler (2013:72) states that 'One of the critical focuses of student underpreparedness is their levels of academic literacy (AL) in the languages of learning at South African universities (which are still mainly English and Afrikaans)'. Learning and teaching at South African universities seldom, if ever, occurs through the African languages, in spite of the fact that these languages are spoken by the majority of students in this country, compared to English and Afrikaans. Nonetheless, some universities, including the University of KwaZulu-Natal (UKZN) in the KwaZulu-Natal Province and the Nelson Mandela Metropolitan University (NMMU) in the Eastern Cape Province have made enormous efforts to have some university courses taught in African languages. These efforts might benefit those students who experience academic challenges as a result of being taught in a language that is not their home language.

Research Problem

While a wide array of research exists on AL both in South Africa and elsewhere, there is still a need for HEIs to share the support strategies that they provide for under-prepared students, in particular those joining the university for the first time and facing the challenge of learning through a language which is not their home language.

Purpose

This paper reports on the data presented by four educators on the AL challen-

ges encountered by university students, in particular English L2 students across different levels of study and fields in a University of Technology (UoT), as well as intervention strategies they employ to bridge this gap. During the writing of this paper, two of these lecturers taught AL, another taught Research Methodology and the other Communication in English. The latter two were included because, unlike AL lecturers who deal directly with this subject, they also incorporate AL extensively in their subjects. The research question was: What AL challenges do students encounter at university and what interventions do lecturers employ to address these challenges? In the context of this paper, AL denotes the ability to read, write, analyse, critique, think critically and creatively, and effectively communicate and understand when spoken to in L2. This paper builds on the work done by Sosibo & Katiya (2015) in which they presented a comprehensive strategy used by a South African HEI to identify at-risk students and to monitor and evaluate their progress. The rest of the paper addresses the Context of the Study, Theoretical Framework, Literature Review, Methodology, Analytical Results and Conclusion. The terms 'home language' and 'mother tongue' are used interchangeably throughout this paper.

Context of the Study

The setting of this study was a South African University of Technology (UoT) which developed as a result of the mergers of three technikons that took place in 2001. The merged technikons consisted of predominantly White and Coloured staff and students, with one of them being a mixture of predominantly Coloured and Black staff and students and few Whites. With the advent of the 1997 White Paper 3: The Programme on the Transformation of Higher Education in South Africa (Department of Education (DoE) 1997), massification of education began. The result was an influx of Black students who previously had limited access and educational opportunities to HEIs in South Africa. Like other HEIs with the same racial history, this institution still bears the scars of racial divisions, with the majority of the academic staff still White. Black academics are few and mostly occupy the lower rungs of the ladder. Nonetheless, the institution is currently in the process of racially transforming itself in order to efficiently serve the needs of its diverse student clientele.

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With regard to the language of learning and teaching (LoLT), English is the medium of instruction in all but one satellite campus of this HEI. On the campus in which Afrikaans is LoLT, the majority of students' mother tongue is Afrikaans. On the other campuses where English is LoLT, the majority of students speak Afrikaans and an African language as home languages, with some of them speaking English as mother tongue. Unlike their English-speaking counterparts who learn through L1, there is a possibility that L2 students encounter more serious AL-related challenges than their L1 counterparts. As shown earlier, this paper investigates AL challenges experienced by students, with a special focus on L2 students and interventions made to scaffold acquisition of these skills.

Theoretical Framework

This study is informed by scaffolding theory (Bruner 1977; Vygotsky 1987). The concept of scaffolding was originally used by Bruner (1977) as a metaphor for depicting the form and quality of effective intervention by a learned person upon the learning of another. Bruner used this term to represent the special quality of the 'guidance' or 'collaboration' within the zone of proximal development (ZPD). He stated as follows:

[...] there is a vast amount of skilled activity required of a 'teacher' to get a learner to discover on his own - scaffolding the task in a way that assures that only those parts of the task within the child's reach are left unresolved, and knowing what elements of a solution the child will recognize though he cannot yet perform them (Bruner, 1977: xiv).

The concept of scaffolding was later developed by Vygotsky (1987) who defined it as support to learning that is used by the most knowledgeable other (MKO) to build upon what students already know to arrive at something they do not know. The MKO can be a parent, teacher, mentor, peer, adult, and so forth. The support (to learning) that learners receive through their interactions with the MKO guides and assists them to move towards the acquisition of new skills, concepts and levels of understanding that they would otherwise not be able to grasp on their own without the

assistance from the MKO. The ZPD denotes the gap between what the students already know and what they are capable of knowing with the assistance of the MKO. The ZPD is the area in which the MKO interacts proximally with the learner/student.

By virtue of the fact that students are social beings, they grow and develop through their interactions with those among and around them. Therefore, the knowledge and skills (including academic and linguistic skills) they acquire are not removed from the contexts in which they are brought up. Freire (1973) speaks of the word and the world to emphasise the intrinsic relation between literacy and the environment in which the child develops. Therefore, it is incumbent upon the MKOs (in this case, AL lecturers and lecturers in general) to scaffold the students' acquisition of AL by utilising their (students') experiences and immediate environments. In other words, development of AL should not be divorced from the students' world but it should form an intrinsic part of it.

Literature Review

Academic Literacy and other Literacies

Academic literacy has aroused world-wide attention and intensive research, particularly in universities that use English as the LoLT (Goodfellow 2005, 2011; Jacobs 2005; Lebowitz 2004). This could be because students who lack AL skills are considered at risk of failure and dropping out (Butler 2013). Warren (2003) defines AL as complex linguistic, conceptual and skills resources necessary for analysing, constructing and communicating knowledge relevant to a subject or course. Yeld (2003 in Ratangee 2007) extends this definition by adding the following set of AL skills: comprehension of information presented in various modes, paraphrasing, presenting information visually, summarising, describing, acknowledging sources, and so forth. Nonetheless, Leki (2007) & Braine (2002) argue that AL includes more than just knowledge of these discrete language skills, contending that AL needs to be holistic and include, for example, competence in reading, writing, critical thinking, knowledge of independent learning process, tolerance of ambiguity, effective practice of good judgment and development of an argument, and a deeper sense of personal identity. Therefore, development of AL must be seen as a comprehensive and longterm endeavour requiring practice and refinement of knowledge and the awareness of meta-cognitive learning processes. Based on these diverse definitions, one can see that no universally accepted definition of AL exists, a fact supported by Parkinson, Jackson, Kirkwood & Padayachee (2008).

Students in HEIs engage with new and evolving ways of knowing, writing, values and beliefs (Ratangee 2007). Ratangee argues that due to this, students need to become familiar with special concepts, theories, methods, rules and writing conventions related to the specific discipline in which they are enrolled. Due to the diversity of disciplines and ways of knowing embedded in them, one cannot talk about AL without relating it to other literacies, for example, cultural literacy (Hirch 2001; Schweizer 2009), functional literacy (Bhola 1995), critical literacy (Freire 1973; Mayo 1995; Shor 1999; Stambler 2013) and several other literacies, such as information, digital and workplace literacies. It is beyond the scope of this paper to discuss each of these literacies. Suffice to say that due to the complexity of the term 'literacy', trying to define AL becomes a very complex undertaking, as these other definitions of literacy have to be taken into account. Incorporating other literacies in the teaching and learning process presents students with a holistic set of knowledge and skills that not only allows them to understand conventions in their disciplines, but in other disciplines as well especially during this era in which interdisciplinarity is encouraged. Heritage (2013) confirms this view, arguing that when we talk about 'academic literacy' we actually mean 'academic literacies' which vary depending on the particular identity of the reader or student.

While some students acquire AL through their participation in their discourse community of the relevant discipline, this is not always the case with students who are less prepared for higher education studies, and especially for those who study through L2. In this context, a key challenge is to assist them to develop AL so as to enable their deeper engagement with university studies (Warren 2003).

Interference of Poor Language Skills with Critical Thinking and Comprehension

The language of writing in academia is a specialised discourse that presents a problem for many students, regardless of whether they are L1 or L2 speakers.

Butler (2013) contends that universities use a number of academic support strategies that serve as intervention measures for students with poor AL skills. However, he notes that offering AL support to underprepared students is 'not a novel idea in South Africa' (p.73). Part of the reason could be that this approach is seen as a deficit model when considering that in South Africa and other countries with students from diverse cultural and linguistic backgrounds, it is mostly students from disadvantaged backgrounds who receive this kind of support. Lea & Street (1998) and Archer (2010) argue for a new approach that challenges the dominant deficit model to understanding student writing and literacy in academic contexts.

In most institutions, producing written text presents a challenge for students, as they regard writing as merely a form of note-taking. Lombard and Grosser (2008) maintain that the capacity to use language is essential to executing critical thinking. Therefore, the lack of a solid foundation in language skills, vocabulary and grammar especially for students whose home language is not English may inevitably result in their inability to think critically. Coupled with this may be a struggle for students to locate information for assignments independently and inability to analyse questions.

National Interventions to Address Students' Academic Problems

The Department of Higher Education and Training (DHET) in South Africa has developed educational reform strategies to enhance students' success, retention and throughput rates. These include the DHET's teaching development grants, through which exorbitant amounts of money are spent on improving teaching and learning in HEIs. Some HEIs have utilised these funds by developing innovative teaching and learning (T&L) projects that have a huge potential for improving quality in higher education and students' AL specifically. In addition, the Quality Enhancement Project (QEP) that allows institutions to share best-practice examples is another promising undertaking by the CHE (CHE, 2013b). The CHE is a quality council (QC) that quality-assures the higher education sector in South Africa through its Higher Education Quality Committee. In addition, the CHE has developed a proposal to offer extended programmes as a means of enhancing the performance of undergraduate students, the majority of whom enter

university with some cognitive gaps in their academic knowledge (see CHE, 2013a). Collectively, these projects have a huge potential for enhancing students' AL and for improving their outputs and throughputs. These education reform policies do not preclude individual HEIs from developing interventions to address poor student success and high attrition rates; bearing in mind that students' needs vary from institution to institution as determined by their socio-economic status, rural geographical location, and other factors. Since each HEI and students' needs are unique, it may be difficult for the state to meet the needs of all the institutions satisfactorily. Individual institutions can play a critical role in addressing university students' AL needs that cannot be resolved at the national level. Therefore, interventions by respective HEIs to address students' academic challenges are indispensable.

Research Methodology

The qualitative case study constituted the design of this paper. The case under analysis was a group of Afrikaans- and African-language speaking students who learn and are taught through English L2 at a South African UoT. The sample of the study on which this paper is based consisted of four lecturers, two offering ALD, one RM and the other CiE. Coincidentally, all the participants were females. They were selected on the basis that they were involved with ALD at different levels, as well as across different disciplines and levels of study. They also dealt with students, the majority of whom learnt and were taught through English L2. Hence, the sampling of participants in this study was purposeful. In this paper, the ALD lecturers are identified as ALDL1 and ALDL2, while the Research Methodology Lecturer is assigned the pseudonym RML and the Communication in English Lecturer CiEL.

Data was collected through in-depth, semi-structured open-ended interviews with these lecturers. Although semi-structured questions were used during the interviews, participants were given opportunities to talk freely without interruption about the academic challenges that their L2 students encountered and the strategies they used to facilitate or scaffold students' learning. Data collection was not conducted in the traditional sense of interviews. As a result of this format, each data-collection session for each

of the four participants lasted longer than normal, for approximately an hour and forty-five minutes to two hours. Data collected from participants was recorded on a digital tape recorder. After each data-collection session, the researcher made sense of collected data by playing the recorder several times and identifying emergent themes. After transcribing data, she went through it repeatedly while highlighting the themes that emerged and classifying them into categories. In the end she came up with the themes that are presented in the next section on AL challenges and the strategies lecturers use to address them.

Ethical considerations were taken into account. Participants were informed of the purpose of the study, its voluntary nature and their right to participate or not and to withdraw at any time if they felt so. They were also informed about how data from the study would be stored, disseminated and used solely for this study and for educational purposes. Ethical clearance from the Ethics Committee with which the researcher of this paper is affiliated was sought and granted. The participants read the draft article to verify the authenticity of the data reported in the paper.

Results and Analysis

Academic Challenges Exhibited by English L2 Students

In this paper, the results include three sections. The first section entails the AL challenges that participants identified as encountered by university students in general, and by English L2 in particular. The challenges include Insufficient Comprehension Skills, Plagiarism and Inadequate Research Skills and Poor Logical-writing Skills. The second section presents intervention strategies for learning and teaching enhancement while the third addresses outcomes of the interventions. In the next section, the AL challenges are presented.

Insufficient Comprehension Skills

Data revealed that poor comprehension of the subject matter taught through English interfered more with L2 students' understanding of what was asked, required and expected from them than with their L1 counterparts. Stephen, Welman & Jordaan (2002) highlight the challenge of black students' poor

comprehension skills. This may imply that in the study on which this paper is based, the gap in the L2 students' ZPD was wider than in the ZPD of their L1 counterparts, requiring proximal intervention by the MKOs. ALDL1 reflected on this situation, stating that:

As academic-literacy development lecturer, it is not uncommon to identify inability of L2 students to understand what is required of them in the writing tasks because of the lack of vocabulary, resulting in their misunderstanding of the question(s) asked or tasks given. For instance, L2 students may not be able to answer a question not necessarily because they do not know the answer, but because linguistic challenges preclude them from understanding what was asked. Sadly, this situation can sometimes be easily misconstrued as poor academic performance on their part without scrutinising the source of students' comprehension barriers and whether they are related to second-language learning.

RML echoed the same sentiment; that the challenge with L2 students is that they have more difficulty with analysing questions than their L1 counterparts, due to their failure to decode new concepts. She put it thus:

L2 students need to understand concepts clearly before they can analyse or apply them in context. The problem is that they tend to lack skills of decoding the meaning of concepts, resulting in memorisation. Consequently, they fail to distinguish between the terms 'describe' and 'analyse' and experience difficulty with moving beyond simple descriptions to applying or analysing concepts or theories in real contexts.

ALDL1 echoed the fact that if students lack understanding [of concepts], they resort to memorisation. She explained that when this happens, the information is stored in the short-term memory and quickly dissipates, which could mean that students lack deep information-processing skills. Pickworth (2001) emphasises the same point, that memorisation results in regurgitation of information and a lack of understanding or insight. Memorisation often signals a gap in a student's ZPD that can best be closed by the MKO through assisted practice (scaffolding). Wilhelm, Baker & Dube

(2001) assert that assisted practice allows the child (or student) to internalise the strategies and language for completing a task, which then becomes part of his or her personal problem-solving repertoire. Once this is achieved, the strategy then enters his or her zone of actual development, enabling him or her to successfully complete tasks without help and to apply knowledge to new situations. ALDL1 emphasised that lecturers should ensure that students, in particular English L2 students get a good understanding of the concepts and vocabulary they require for each subject and study level. In my view, these concepts and vocabulary can become advance organisers that scaffold their acquisition of new subject matter (Bruner 1977). In an effort to assist their students with subject-specific vocabulary, some departments offer discipline-specific ALD (Butler 2013), such as Engineering English or Mathematics English, which probably facilitates an understanding of the subject matter taught.

CiEL explained that she always gave her first-year students a baseline test to determine their comprehension skills. Her view was that:

There is a high percentage of L2 students that do not comprehend because of the barriers in language. There is a strong relationship between being able to communicate in the LoLT and academic performance because language is a vehicle of communication and thinking. L2 students who struggle in English tend to fail to apply the concepts they have learnt simply because they lack comprehension and communication skills and are limited in thinking in English.

ALDL2 mentioned that English L2 students who studied the sciences tend to struggle more with reading, understanding and applying scientific jargon than L1 students. She reported that due to the lack of understanding, students tended to regurgitate facts without being able to apply them in practical situations. These results were unexpected, considering that, as hinted earlier, these departments provide discipline-related ALD to scaffold their students' learning.

In this section, participants reiterated the same fact: that without comprehension of concepts and vocabulary, students fail to apply those concepts in context. Part of the reason, as shown, is that language is the vehicle of thought and communication. Therefore, there is a need to guide and assist students towards attaining actual development.

Plagiarism and Inadequate Research Skills

In literacy-related subjects such as Research Methodology, which involve a number of writing conventions, it may be easy to identify students' lack of AL skills. Therefore, RMLs are in a better position to identify and address AL gaps in their students. RML described her students' AL challenges thus:

More often than not, I have noticed that students are generally unable to develop an argument logically and coherently in their writing. They also struggle with supporting their claims with valid facts obtained from literature. Some of them exhibit poor reading skills and a lack of reading comprehension. In addition, they demonstrate inability to conduct research and to use in-text referencing appropriately, including developing a reference list using the Harvard referencing conventions. Synthesising literature, coupled with a high rate of plagiarism appears to be a big challenge for the majority of my students.

Not only this, but it appeared that students encountered other challenges, as expressed by the same lecturer:

Most of our students, including postgraduate students who write theses, reflect inability to paraphrase using their own words. As a result, direct citations clutter their work. They also do not appear to understand that there is a thin line between paraphrasing and plagiarism, believing that if they have put it in their own words and cited a source, they have not plagiarised. This practice continues unabated even if they have been given a lecture(s) and notes on plagiarism or been informed about the consequences of plagiarism. Their analytical and argumentation skills are also severely lacking.

CiEL echoed the same concerns but added that students lacked argumentation skills, which she identified as vital in academic writing and communication. She stated that,

When I gave them an essay to argue for or against a story, they went down flat. They wrote good essays but missed the point. After teaching them how to compare, cite, reference, they couldn't do it. Interpretation was so badly done that I had to sit down with then and ask: 'if I say this what do you say'? Most of them went blank. They also fail to back up their arguments with valid facts.

Inability to paraphrase, interpret, raise arguments and buttress them with valid facts from literature may signal a gap in the students' AL. Intervention or scaffolding using concrete examples becomes critical in such situations.

Poor Logical-writing Skills

Both ALDLs emphasised that when students wrote an essay, literature review or discussion in a practical report, they needed to know how to present their work to the readers in a logical series of facts and reasoned argument. However, as they observed and reported, this was not normally the case. ALDL2 highlighted the fact that:

Instead, the majority of our students tend to write as they speak, not understanding that academic writing is formal. This situation might be an indication that they have not grasped the difference between academic discourse and everyday language.

There was a mutual feeling among ALDLs and RML that when students wrote academic research reports, the majority of them wrote jumbled sentences with no logical order while others tended to write long, run-on sentences. The RML attributed this situation to the students' inability and a lack of understanding that they have to break sentences down to manageable chunks. CiEL expressed the view that a person who communicates logically in speaking tends to write logically as well.

Intervention Strategies for Learning and Teaching Enhancement

In most HEIs, students have access to support programmes including ALD, but the question is whether these programmes address the real issues that

concern the diversity of students (Mahlo & Taole 2011). National intervention strategies provided by the DHET to scaffold students' learning were presented earlier. However, these strategies are general and do not address ALD specifically. In the next section, intervention strategies provided by participants to scaffold students' AL learning are presented. They include ALD Lectures and Workshops for Improving Insufficient Comprehension Skills; Strategies for Addressing Plagiarism and Inadequate Research Skills; Addressing Poor Writing Skills and Mentoring through Individualised Attention.

ALD Lectures and Workshops for Improving Insufficient Comprehension Skills

ALDLs reported that academic support staff at university and faculty levels used a variety of intervention strategies to scaffold students' AL skills, in particular those L2 students at first and second years of study and at postgraduate levels as well. They mentioned that to enhance students' comprehension of concepts and ideas, they offer lectures per lecturers' identified needs, as well as through training workshops offered on a weekly basis. They added that the workshops focus on a number of AL skills, including discipline-specific concept development and acquisition, academic writing, reading and oral presentations.

RML reported that she addressed the issues she had raised regarding students' insufficient comprehension skills that probably led to their inability to decode, analyse and apply concepts as follows:

In my subject, I use many examples to define a concept so that my students can be able to decode its meaning and to apply it in context. Research is very concept-based: students have to understand concepts clearly so that they can be able to apply them in various contexts or in their proposals, essays and thesis. Sometimes when you ask students to analyse concepts or situations, they tend to describe them because they have merely memorised them. That is why I emphasise understanding of concepts first. After that I teach them analytical, critical and argumentative skills that they need in writing academic work. I also teach them to summarise, paraphrase and

synthesise using précis writing, because it hones their analytical skills and teaches them to summarise coherently without plagiarising: a huge problem in the academia. Without thorough comprehension, students cannot perform these tasks.

RML remarked that while L1 students may find these activities challenging, L2 students often found them even more difficult, as they have to do them in a language that is not their home language. CiEL reported that she addressed students' barriers to communication, comprehension, thinking in L2 and application of concepts that she had identified by letting them develop fifteen-minute dialogues from reading texts, which they dramatised using electronic media. She believed that dramatising text had many benefits for the students. The first was that it forced students to understand text. The second was that it helped them to think and communicate in English and interpret and analyse text. The third was that it honed their reflective and technology skills.

ALDL2 had mentioned that some students studying the science subjects tended to struggle with reading, understanding and applying science jargon in spite of the fact that discipline-related literacy is offered to them. As remedy to this situation, ALDL1 explained that,

To enhance students' comprehension of the sciences, we provide them with a computer-assisted reading programme (CARP). This programme offers a variety of reading, writing and mathematics skills and a wide variety of test activities. At the end of each unit students have to complete a test that assesses their understanding. We also have a one-on-one session once a week in the lab, after which students work on their own without assistance, as long as they have internet access. The students' progress is monitored closely.

CARP is a good example of scaffolding, in which student and the MKO interact. Once a student has mastered the skill, the MKO 'phases out' to allow the student to work independently. Deducing from the strategies presented, it is clear that efforts are made to scaffold students' understanding of concepts so that they can analyse and apply them in a variety of contexts instead of memorising them. Ability to apply concepts is a good indication of actual development.

Strategies for Addressing Inadequate Research Skills and Plagiarism

Among the challenges exhibited by students with regard to research skills, RML and CiEL had both highlighted students' challenges with developing arguments and supporting them with valid facts. RML identified a number of gaps which, if not scaffolded, can severely limit students' academic-writing skills expected at university level. To close the gaps identified, RML explained that:

My lectures cover a series of topics related to proposal and academic writing in which students acquire the skills to conduct research. As I said before, it is very important to give them writing text in which they have to practice summarising ideas and paraphrasing without plagiarising. Sometimes I invite guest lecturers to teach aspects such as referencing and argumentation. It helps when students hear a different voice than the one they are familiar with. Students who write a thesis learn research skills as they go along or in research seminars. Although all the students struggle with research writing, for L2 students it seems much worse than for L1 students.

CiEL reiterated the powerful tool of drama that she said she linked with interpretation and argumentation skills. She explained that before students can dramatise text, they need a thorough interpretation of facts which invariably assists with deep analysis. According to her,

With drama, everything goes, as I can ask students to create drama using text and to develop an argument to support or refute facts in that drama.

She acknowledged, however, that language is a powerful tool for students to be able to accomplish these tasks, and that the majority of L2 students do not usually find activities like these easy.

Addressing Poor Logical-writing Skills

Data showed that interventions were in place for those students who exhibit-

ed signs of struggling with writing logically and efficiently due to low vocabulary and literacy skills, as described earlier. ALDL2 explained the intervention strategies they used as follows:

We provide them [students] with a series of sessions in which we discuss different topics relevant to their disciplines. We are aware that the disciplinary knowledge and skills they bring are crucial in scaffolding their learning and facilitating interactions. Each topic is unpacked by breaking it down into different parts such as, for example, instruction/command words (verb(s), focus/content words, and the scope that needs to be covered in the topic. After they have mastered the skills intended for these sessions, we give them different topics to unpack on their own, identifying the most salient aspects of the topic and organising them logically.

ALDL2 further explained that while applying these strategies, students are guided into understanding formal writing and the structure of an essay, beginning with a paragraph which is preceded by a topic sentence. She elaborated as follows:

We assist them [students] in understanding that it is important to sustain a theme within a paragraph and that a good paragraph should depict unity and coherence. More importantly, we equip them with skills of identifying poorly- and well-written pieces of work. When they have mastered these skills, they are usually able to write logically and coherently and to make sound arguments. We illustrate to them how formal English is different from colloquial English.

The RML reiterated the importance of précis writing as a tool for producing organised and logical writing. She emphasised the power of providing students with different examples in order to demonstrate what an organised and well-written text looks like. This is called modelling. Frederickson and Cline (2009) explain that, through modelling, learners are provided with step-by-step demonstration of what is correct or expected. Nonetheless, RML admitted that logical writing requires immense practice and that students usually find that learning to do it right is extremely difficult. CiEL emphasised the importance of organising ideas in one's head before

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jotting them down on paper as a powerful communication and logical-writing strategy that she said she emphasised in her Communication in English classes.

Mentoring through Individualised Attention

Improving student support is inextricably tied to student engagement, and engagement for each student can be accomplished only through a more personalized academic and intellectual programme relevant for each student (Mahlo & Taole 2011). One-on-one interaction with students helps to enhance learning and to minimise the gap in their ZPD faster than when interaction takes place with a larger group of students. Mentoring is one such strategy. It is student-focused because it provides one-on-one support for students who can encompass guidance on study and school work, or social and emotional support. ALDL 2 emphasised that mentoring was one of the commonly used strategies found in effective programmes that they used to keep students actively engaged. ALDL 1 supported this view, acknowledging the fact that according to Freire (1973), learning is reciprocal: the learner becomes a teacher and the teacher becomes a learner. Evidently, in such a teaching-learning situation, interaction is strengthened and learning is enhanced. Interaction is central to scaffolding, as both learner and the MKO have to interact proximally in the ZPD to allow the former to move from the potential to actual development (Vygotsky 1987).

Outcome of the Interventions

It would appear that based on ALDL 2's statements, the impact of AL interventions yielded the desired results, as reflected below:

Students who participate in our intervention programmes appear to benefit, as reflected in their subsequent performance in the tests, assignments and presentations. This reflects improvement in their AL.

She appeared to believe that the success of the interventions was based on a number of different factors that she named below:

We assign this improvement to the fact that our interventions are based on clearly defined objectives. They are also customised to suit particular departments and students. Furthermore, our interventions are mainly based on valid information on students' current performance and realistic implementation. In addition, in developing the programmes, we use discipline-specific material that students are familiar with instead of generic material that may not be relevant to certain disciplines. Most importantly, we use everyday information and experiences that are related to the students' immediate environments and lives.

ALDL1 expressed the view that reading CARP had positive effects on the students' vocabulary-building and writing skills, which she maintained students could use to make meaning of the science discipline. Warren (2003) concurs, that vocabulary-building and writing skills are required to analyse, construct and communicate knowledge in the subject area. ALDL1 further held that cooperation of subject lecturers evidently assisted them to achieve their goals. She added that success of interventions was due to those dedicated lecturers who monitored students' progress in class and reported aspects that needed to be reinforced. RML was not as adamant about the positive effects of AL interventions as her ALDL counterparts; she felt that even with the interventions; students' academic writing skills remained relatively poor. She acknowledged other extraneous factors that may not necessarily relate to studying through L2 or poor AL. CiEL was, however, optimistic about interventions provided to students, maintaining that were it not for them, high failure, dropout and attrition rates among their students would probably have been higher than they currently are.

Conclusion and Recommendations

This paper presented an analysis of the AL challenges that students faced in a UoT, particularly those who study through English L2. Strategies that ALDLs, RML and CiEL used to ameliorate this situation were highlighted. Even though the intention of this study was to investigate the AL challenges specifically experienced by L2 students and interventions made to address them, the challenges and interventions reported in this paper cut across students, including those who learn through their home language. Data

revealed that most of the challenges that students faced were related to low AL levels, probably emanating from the fact that for some of them, English is L2 and not their home language. Nonetheless, other challenges may be rooted in the academic gap alluded to earlier or be the result of extraneous variables that have no association with this gap. From what one gathers from participants, the intervention strategies appear to have been effective in scaffolding students' AL skills. Nonetheless, improvement in the students' AL skills may not have always been actualised, as reflected in the doubts expressed by RML. In this paper, it is evident that the lecturers use a variety of scaffolding strategies to guide and assist students. Lecturers also make an effort to incorporate students' immediate environments and experiences, which helps them to link the word with the world. Strategies involving deep analytical and critical and creative skills do not appear to be emphasised by all participants. Other literacies such as cultural, critical and information literacies do not appear to receive emphasis either. Yet these skills and literacies are crucial for students to be critical, analytical and able to function in the global world. It appears that for AL interventions to be effective, they should be implemented university-wide rather than as isolated, stand-alone entities provided on certain days under certain circumstances. Evaluation of interventions through pilot studies and other means is essential.

The study on which this paper is based was designed to share knowledge with other HEIs who may be experiencing challenge(s) related to students' poor AL. This is because HEIs seldom document the knowledge, skills and intervention strategies that they use to scaffold students' AL skills, in particular those students who learn through a L2. Yet this challenge permeates South African HEIs; many of which admit students from diverse backgrounds with linguistic and academic challenges. There is a need for robust research and sharing of strategies among HEIs on how to overcome students' AL related challenges. Sharing of best practice examples has a potential to reduce or eliminate these challenges among university students, in particular among English L2 students. In turn, it can improve students' success, output and throughput rates and minimise their high dropout, attrition and failure rates.

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