

## Practicalities of a Computer-assisted Language Learning Project

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**ABSTRACT** Academic Literacy (AL) is an all-embracing term and most support courses can only target an aspect of it. Supporting academic language literacy has received some attention because of its significance in tertiary success. The present paper is a discussion of a computer-assisted language learning (CALL) project which was piloted at the University of Venda (UNIVEN) in response to challenges identified with a language support course, English Communication Skills (ECS). ECS was criticized as not resulting in significant linguistic development and blended learning – lecturer and CALL instruction - was seen as one solution to this criticism. The project was an intervention to reinforce some reading aspects of selected first-entering students, using *MySkillslab*, a computer software program. The paper concludes with reflections on the conceptual and practical implications of such a project.

### INTRODUCTION

Advantages of computers in language teaching is now an accepted fact and blended instruction now features in many second and foreign language teaching situations (Mohammadi et al. 2010; Montero-Fleta and Perez-Sabater 2010; Ghasemi et al. 2011; Zaid 2011; Al-Mansour and Al-Shorman 2013; Dina and Ciornei 2013). Many first-year students are challenged by the expectations of tertiary education with respect to thinking and learning and many struggle with their new role as independent learners, critical thinkers and speakers and writers of academic discourse (Evans and Morrison 2011; Gopee and Deane 2013; Kaur and Sidhu 2013). In addition, the greater diversity in student profiles and the high attrition rates in South African Universities have resulted in constant calls on universities to find solutions (Strydom et al. 2010; Mdepa and Tshiwula 2012; Krugel and Fourie 2014).

One reason universities always offer for the unsatisfactory state of affairs is the fact that such students are minimally equipped, not only for the content demands but also with the language of instruction, which in most universities, in South Africa is English (Duff 2010; Evans and Morrison 2011). Difficulties are seen, in particular, with students' reading and writing skills and research has demonstrated that there is a direct correlation between reading levels, general language literacy levels and tertiary preparedness (Kern 2000; Pretorius 2000; Sengupta 2002; Marzban 2011). Reading and writing are generally accepted as core components of literacy (Gee 1996; Nordin et al. 2013). The research-

ers have further refined this idea by identifying elements which constitute academic literacy as reading, writing, listening, speaking, critical thinking, use of technology and habits of mind (ICAS 2002; Kaur and Sidhu 2013; Cummins 2014). It is this same point which underpins the international use of reading literacy as one of the indicators of academic literacy and foreign students' potential performance at tertiary, "Reading literacy achievement at senior secondary level contributes to preparation for successful participation in tertiary education and training" (Ward 2011: 5). This has necessitated the provision of some support for students either at the beginning of their studies or throughout, depending on the nature of the support required (Ho 2011).

Language, in particular reading literacy, therefore assumes some importance in any attempt to offer academic support to under-prepared students (Grabe and Stoller 2001; Nordin et al. 2013; Krugel and Fourie 2014). ECS is a course aimed at improving the academic literacy levels of students with no particular emphasis on reading. It is in response to this that the blended, more personalized instruction strategy was piloted in UNIVEN with *MySkillslab* with the ECS course. The lecturer-student ratio, 1 to  $\pm$  400, which was further divided into three groups of  $\pm$ 130 means that instruction in ECS relies on the traditional approach of face-to-face interaction, with a facilitator, in a lecture hall. This ratio may be tenable in situations where acquiring content is the main objective, but in a skills-orientated academic support, such figures adversely affect the outcome. While it can be ar-

gued that this type of pedagogy has its place, it is never-the-less labor intensive, not individual-specific and extremely time-bound. In addition, the obvious differences in AL ability of the students taking ECS necessitate lecturers aiming for the 'middle ground'; a situation which may be unsatisfactory to the whole group.

It is within this background that a proposal was submitted to South Africa Norway Tertiary Development (SANTED) which funded the use of CALL to supplement ECS instruction in particular some aspects of reading. This introduced the concept of 'multimodal', (Van Schalkwyk 2008 or 'blended' (Gilliver-Brown and Johnston 2009) approach to reading instruction (Montero-Fleta and Perez-Sabater 2010; Marzban 2011). Computer-assisted language learning is a generic term for interactive language learning strategies using various technological equipments located in a sophisticated and learner-centered laboratory. Within such a fully interactive laboratory one would find equipment such as video and audio tapes, libraries and computer-assisted language learning software and graded workbooks.

### Background to the Problem

Post-1994 democratic elections have seen a transformation in the educational and social set up of South Africa; this has also resulted in greater diversity in the profiles of tertiary students in all institutions, including those enrolling in UNIVEN (Mdepa and Tshiwula 2012). UNIVEN is a regional university with the majority of the students being first generation scholars, coming from rural homes with minimal educational resources and collaboration between the home and school. The schools are also characterized by teachers who because of various reasons such as, lack of expertise in the language of instruction and resources cannot adequately assist in the development of students' reading literacy (Kaburise 2012, 2014; Krugel and Fourie 2014).

Enhancing academic literacy within an institutions setting, according to Duff (2010) and Ho (2011) implies learning to 'read' the culture of the place and coming to terms with its unique rituals, values, style of language and behavior and sometimes it becomes necessary to explicitly assist students to achieve these. There can be minimum disagreement with Duff (2010) and Ho

(2011) on the above point although the translation of AL development into actual classroom support activities, for individual student profiles, has always posed problems for institutions (Wahi et al. 2012). UNIVEN in addressing the needs of its language under-prepared students offers ECS - a compulsory course offered over two semesters, ideally for all first year students although some students need to repeat the course over subsequent years.

It was felt by academic departments in UNIVEN that ECS as an AL support course was not bringing about marked improvement in students' language performance. Whether this is a fair comment is open to debate as sometimes the impact of an intervention strategy may take years to manifest itself. The argument of these departments is that the immediate purpose of this academic support, ECS, is to assist students to acquire enough academic tools to enable them engage with the immediate demands of tertiary specialization. Long term linguistic development may occur in these students once they have left UNIVEN, for these departments such development is incidental as currently they are still faced with under-prepared students (Kaburise 2012).

### Theoretical Framework

Literacy is defined as the interconnected linguistic, mathematical, technological, conceptual and surface skills needed for analyzing, constructing and communicating knowledge within academic settings (Donohue and Erling 2012; Nordin et al. 2012). In his seminal work of 1968, Bourdieu talks about the complex nature of literacy, how it governs academic interactions and how the standards for literacy vary from one context to another. Attempts to enhance literacy can, therefore, target various components, such as linguistic support in the language of instruction.

English as the language of instruction (LOI) requires competence in its skills of listening, speaking, reading and writing skills. Competence in English as LOI should be differentiated from content knowledge in English; the former is a skill which facilitates performance in all aspects of tertiary demands and like all skills, practice makes perfect and allows for better performance. This was the original rationale behind behaviorist CALL where it was felt that individual drills possible with computers result in the acquisition of certain sentence forms. Criticism of be-

haviorist CALL saw the emergence of communicative CALL in the early 1980s which was in line with the revolution in language learning history. Perfection of out-of-context drills was seen not as a sign of language competence but rather the usage of these drills in appropriate speech or communication events. Communicative CALL saw students working with texts, hence interacting with the whole process of text creation. Communicative CALL corresponded with cognitive theories which stressed that language learning was a process of discovery, manipulation of available language knowledge and creation of resultant new structures. CALL activities for students during this period, included stimulations of speech events, reconstruction of texts and orientation into nuances of tertiary writing and reading (Warschauer and Healey 1998; Ghasemi et al. 2011; Dina and Ciornei 2012). By the 1990s communicative CALL was enriched by a more social-focused language learning which was seen in task-based activities and projects in a multi-skilled approach. The computer became more integrated and inclusive in language teaching and learning resulting in what is now known as 'blended' learning (Alebaikan and Troudi 2010; Mohammadi et al. 2011).

Blended learning or the inclusion of computers as a resource to supplement, reinforce or as a substitute for face-to-face instruction has assumed some relevance in the teaching of language for specialized discipline areas and with certain category of institutions and students. Blended learning is a pedagogic paradigm which attempts to individualize learning for the multiplicity of abilities which exist in the average classrooms, tertiary levels included. In South Africa, the diversity and increase in local and international students, the mandate for governments and education institutions to be socially responsive and the escalating fluidity within social classes have seen the need for instructors to adopt multimodal approaches to teaching. Cazden et al. (1996) and Street (2000) in their discussions on multi-literacies and new literacies describe a fundamental shift from the more mono - approach to competencies to one which includes print, visual and multimedia resources hence different forms of student engagement in the learning process (Anstey and Bull 2006; Alebaikan and Troudi 2010; Strydom et al. 2010). Problems with student retention due to AL unpreparedness are compounded by students' inability to self-assess, self-correct or access the

right kind of support. In such a context, initial diagnoses by software program like *MySkillslab* and the subsequent design of individual reinforcement activities are invaluable.

The all-embracing and interconnected nature of AL means that its development usually has to be targeted at aspects and it is then hoped that students would apply concepts mastered in one area to others. For example, if students master logically sequencing of ideas in language support classes, this should be seen in their ability to, broadly and critically, listen, discuss and present issues (Leki 2000; Baine 2002). Therefore for this SANTED – UNIVEN project, not all aspects of language development could be addressed. Only reading, aspects of vocabulary development, logical development of ideas, distinguishing between main and supporting facts, sequencing of ideas and following arguments were focused upon. The theoretical reasons for selecting these aspects are discussed below.

Spoken and written discourse is the usual way of demonstrating tertiary competence and its quality is directly dependent on students' vocabulary bank; which in turn is dependent on factors like their knowledge of morphological processes, semantics and reading habits (Cummins 2014). Such a background assists with words and sentence meaning-creation as students can, by a process of lexical or sentential analysis, engage in research and discourse. Semantics, with its focus on meaning, by processes such as componential analysis, isolating constituent features, establishing relationships between words and constituents of sentences, process of affixations and semantic roles can afford students an insight into vocabulary development (Thomason 2012; Karthik 2013). Logical development of ideas, distinguishing between main and supporting facts, sequencing of ideas and following arguments all aid students' to critically engage with text. A text is a unified piece of writing, cohesively arranged and argued around a point (Abola 2012). In text-creation, selecting argument points (main and supporting), developing them by research and experience, sequencing the arguments (logically or in order of importance) is highly dependent on students' ability to see aspects such as literal vs. implied information, logical vs. illogical arguments, main vs. supporting details, relevant vs. irrelevant and supporting vs. non-supporting arguments and incorporating these points in their listening, speaking and writing assignments.

Reading at tertiary level assumes great significance for students as no quality oral or written work can be produced by them without extensive content information, using multimodal research (Donohue and Erling 2012; Nordin et al. 2012; Tengku and Maarof 2012). The distinction between, a paper awarded an 'A' or a 'Fail' lies not only in the presentation but what is also embedded in the arguments. The reading demands at tertiary means that students should have advanced skills in critically following authorial arguments and purposes and be able to succinctly interact with them. Epistemic cognition is the understanding and ability to interact with academic texts and subject content and is more familiarly known as 'critical thinking'; these are all integral parts of AL (Duff 2010). Cognition involves acquiring knowledge, through reading, using elements like our thoughts, ideas, convictions, experiences and environment; hence the ability to infer through analysis is a major outcome of reading; we can only infer from evidence gathered through reading or lived experiences. Appropriate reading makes it possible for students to internalize, comprehensively, content needed; once that is done students can competently manipulate the information in response to assignment demands. Reading facilitates cognitive mental processes such as, reasoning, information processing, language attainment, problem solving, decision-making, analysis, meaning making and construction of discourse.

## OBSERVATIONS AND DISCUSSION

### Report on the Santed – Univen Language Project

The SANTED – UNIVEN language project was a pilot project designed to improve selected students' handling of aspects of reading literacy through the use of an educational software, *MySkillslab*. The objectives of the project were divided into long and short term:

#### Long Term

- ♦ To improve the throughput rate of students at University of Venda;
- ♦ To enhance students' academic literacy.

#### Short Term

- ♦ To improve students' English reading literacy, critical thinking and handling of academic discourse.

The project started in July 2009 with 305 first-entering students, selected through a series of aptitude tests. Students deemed as needing reading support were then enrolled, for a year onto *MySkillslab* by the agents of the software. A coordinator, some ECS lecturers, two full time research assistants and a part time technical assistant were also enrolled as part of the project to ensure the academic and the technical running of the project. *MySkillslab* is an interactive computer-assisted program and consists of a series of activities for students to work through individually-designed plans based on results of their diagnostic test; and students worked on a series of tasks in reading, critical thinking and discreet grammar points. There were also detailed explanations on the topics. If a student has difficulty in mastering a concept, the student would automatically be directed to the explanations sections followed by further reinforcement exercises and the research assistants and the lecturers were also available for extra support. Targets were set each week and students did the tasks at their own time, and their progress was monitored by the assistants and the lecturers, using the 'gradebook' - the tutor-monitoring facility of *MySkillslab*.

The project consisted of 35 computers and two printers which were housed in one of the computer laboratories (labs). Access to the labs was regulated by the normal University rules and students used their pin numbers to access the SANTED computers and the activities. The day to day supervision was the responsibility of the two assistants. Students were expected to go to the labs and work through the program in their free time or any other time determined by their lecturers.

A total of 305 students wrote the pre-test in June / July 2009 and 300 wrote the post-test in July 2010. Their achievements can be seen with a 'before' and 'after' profile of the 300 students in Table 1.

The first lot of figures in Table 1 shows the numbers of and percentages at which the students passed the five aspects. The total shows that 48 percent of the students could handle the tasks in the pre-test. After exposure to *MySkillslab* the number of students who showed mastery of the various tasks had increased to 70 percent. An improvement of 22 percent after the exposure is most encouraging, although literature on the program indicates that

a mastery level between 75 percent - 80 percent is ideal and facilitates application. The sections following reflect on the conceptual and practical implications of the project.

**Table 1: Students' performance on MySkillslab**

<i>Pre-test taken by 305 students</i>	<i>Post-test: 300 students</i>	
<i>Competences</i>	<i>No: of students who showed mastery</i>	<i>No: of students who showed mastery</i>
Vocabulary	201 (66%)	240 (80%)
Logical development	137 (45%)	198 (66%)
Identifying main idea, essential and non-essential facts	113 (37%)	180 (60%)
Sequencing of ideas	122 (40%)	225 (75%)
Knowing and following arguments	162 (53%)	210 (70%)
Total	48%	70%

## Reflections

This project demonstrates that students' performance can improve after a relatively short and intense exposure to an intervention strategy of the nature of *MySkillslab*. In other words, the results have shown that discrete reading skills like, using morphological knowledge to identify and develop vocabulary skills, and critically interrogating text by analyzing and inferring evidence, prioritizing and sequencing of ideas do respond immediately to such remedial programs as offered by *MySkillslab*. Such an improvement is not an end in itself; English is an enabling tool for students to handle all facets of tertiary academic pursuits hence reading competence *per se* is not the ultimate aim of such project; rather the effect of such a project on all aspects. Hence, the success of this project should not only be seen in students' improved handling of the reading skills focused upon but should be cross-sectional; their listening, speaking and writing in their discipline-specific courses should echo this improvement. Since this was quite difficult to ascertain and since such a broad-based evaluation was not undertaken with this project, definite statements about 'improvement' should be made within certain parameters. This is a fair caution to utter because, as mentioned earlier, long term linguistic development in these students may occur once they have left

the University. Therefore, one of the challenges of projects of this nature arises from the fact that any improvement in anybody's language literacy is not as easily quantifiable in such limited time, as improvements in content or discipline-specific subjects. The success of an intervention of this nature can also be better seen from a broad-based longitudinal case study with a control group built into it. To assist students transfer the mastery gained in English, an application aspect also needs to be introduced. This can be introduced by students also being exposed to language activities meeting the language demands of their disciplines.

Reinforcement and practicing of the reading skills need to be constant. The students being in various lecture groups, meant the lecturers had a challenge incorporating some revision/practices in their teaching. However, since these were mainly general reading skills, most lecturers managed to blend some aspects into their teaching and, as noted earlier, individual extreme cases of confusion were dealt with, by the research assistants, if the students failed to grasp the explanations offered by the program. English competence, as noted above, is an enabling ability for the other demands of academic pursuit. If English is mastered only as a content knowledge, then application becomes a problem. That usually happens if students have limited mastery of a concept.

There were only 35 computers for 305 students, in addition most of the students were non-residential students, with no computers or internet facilities in their homes, hence their only chance of practice was during the day, during their free moments; this limited their exposure to the program. Some students obviously did not fully internalize some of these aspects, as some results showed less than 75 percent mastery, a problem which can be solved by students getting a longer exposure to the program, for although the students were enrolled for a year, holidays and other interruptions reduced the exposure time by as much as  $\pm$  three months. The researcher believes an extra year could have seen long-term gains. This had financial implications as further access would require resources from the students themselves or from the University; both did not prove possible. SANTED unfortunately de-invested in South African tertiary education in 2010 and could not continue with the support.

The students on the project quickly realized that the project was of a remedial nature and this initially de-motivated them but their interest was rekindled as some saw immediate application of the skills in their assignments. They saw similar aspects being instructed during lectures and they felt they had some advantage hence they gradually realized the value of the tasks. The nature of student engagement with on-line remedial instruction is highly dependent on the approach that support staff follows in their interaction with the students. Student engagement must be underpinned by students' self-realization that they must take responsibility for their learning and work autonomously based on lecturer or self-evaluation. Poor engagement with the concept of on-line support caused, initially, high rates of absenteeism; this was partially controlled by some lecturers including the grades from the tasks as part of students' semester assessment, but this necessitated close monitoring of students making it imperative that the assistants be present, all the time. This, of course, negated the inculcation of self-development, autonomous learning and flexibility of the program. In addition, once the results of these activities were factored into students' assessments, there were attempts, by some students, to get their linguistically more competent friends to perform the tasks on their behalf. Although this was controlled by the assistants' insistence on students bringing their student cards to their sessions, after-hours sessions had to be reduced as only volunteer assistants could be used. This was rather disappointing as it seemed intrinsic self-actualization and development took a second place to students' desire for immediate better grades. The conclusion from all this is that the nature of student engagement with blended instruction has to well approached and strategized by staff.

Attendance was also low initially as students could not see that their poor performance on the pre-test can be improved by these tasks. This brings up the earlier point made about the need to pay attention to the quality of student engagement with on-line support. There is a need for clear and succinct explanation of the overall purpose of on-line activities not only to maintain students' interest but for them to see the relevance and direction of such exercises (Jones 2001; Salmon 2002). This attitude is partially explained by the point mentioned earlier that stu-

dents fail to see English skills as facilitating their general handling of all tertiary courses, rather they see English as content subject only to be theoretically mastered and applied selectively. In addition, students seem not aware that mastery, for example, of logical sequencing of ideas can be used in all disciplines or that knowledge of morphological rules for vocabulary development cuts across all disciplines. Part of the problem also arose from the fact that language competence required for successful tertiary study is not limited to reading competence; however this pilot focused exclusively on enhancing reading concepts, critical thinking and grammar points with no equal emphasizes on the other language skills. The researcher has been told that *MySkillslab* does cater for all the skills (listening, speaking, reading and writing) although some extra equipment is required such as, listening and speaking booths.

The final very obvious but pertinent point is that students need rudimentary computer skills before they can use the program. 90 percent of the students were not familiar with computers so the assistants spent some initial time helping the students to maneuver their way through the intricacies of a computer. This, naturally, further reduced the length of time students had working on the actual course.

## CONCLUSION

There is evidence that blending e-learning with traditional pedagogies ensures outcomes like, customization, reinforcement, remediation, and improved performance and although the impact of such an intervention may not be immediately obvious, blended approach to AL development has potential in a context like UNIV-EN. It would have been extremely beneficial if student had been exposed to all the four language skills in this pilot but since reading is a vital activity in tertiary studies and if its immediate enhancement is possible, that should reduce some of the students' literacy challenges.

## RECOMMENDATIONS

Any kind of CALL program should be blended into the main course's outline. It should not be seen as an add-on, both by instructors of the course as well as the students. That would require a re-designing of the whole course so that

CALL activities are infused in relevant sections and become an application or implicit instruction sections of topics. This approach will increase motivation for the students and would not have the negative connotation of it being a 'remedial' activity. Some kind of computer literacy program should be initiated as soon as first-entering students are formally enrolled in the University, possibly during the weeklong orientation period so students can have the maximum benefit from any CALL programs. The cost for participating in such programs should be inclusive in the fees so that any financial assistance offered to students would be inclusive of such costs.

### LIMITATIONS

The fact that students could not be exposed to the program for the recommended full year may have affected the validity of the final results. *MySkillslab* is a very structured intervention program in terms of content and the time allocation for the acquiring of each skill. The need for students to complete certain activities for assessment purposes meant an alteration of some of the content and length of time students could spend on each activity. This may have a detrimental effect on students' ability to internalize and subsequently apply some of these concepts.

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