

THE INTEGRATION OF LANGUAGE AND THINKING SKILLS IN A BRIDGING COURSE FOR PRE-UNIVERSITY STUDENTS AT THE MILITARY ACADEMY

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This article describes the design and presentation of a bridging course for students who were admitted to a degree course at the Military Academy at Saldanha Bay, but who were considered inadequately prepared for tertiary study. The main focus of the bridging course was the upgrading of students' language skills in both English and Afrikaans. Language content was, however, integrated with components on thinking and study skills. Results of pre- and post-tests are given, as well as some qualitative data regarding the success of the course. Academic results of students' first year of study (1991) are summarised, and, where relevant, are related to the approach to and content of the bridging course.

Hierdie artikel beskryf die ontwerp en aanbieding van 'n oorbruggingskursus vir studente wat toegelaat is tot 'n graadkursus aan die Militêre Akademie te Saldanhabaai, maar wat beskou is as onvoldoende voorberei vir tersiêre studies. Die hoofokus van die brugkursus was die opgradering van studente se taalvaardigheid in Afrikaans en Engels. Taalinhoud was eger geïntegreer met komponente van denk- en studievaardighede. Resultate van voor- en na-toetse word gegee, asook sekere kwalitatiewe data aangaande die sukses van die kursus. Akademiese uitslae van studente aan die einde van hul eerste jaar (1991) word opgesom en, waar relevant, in verband gebring met die benadering en inhoud van die brugkursus.

1 Introduction

The necessity for bridging courses and some form of academic support for pre-university students is especially apparent in South Africa where increasing numbers of non-traditional students enrol at westernized institutions like universities (Mehl, 1988). Many of these students already have academic backlogs as a result of deficiencies in especially black education. These deficiencies include the pupil-teacher ratio, the large number of under-qualified black teachers, and inadequate facilities. It can thus be concluded that a gap exists between the entrance level of these students and the standards and demands of the university or course for which the students are enrolled. When the situation is aggravated by the fact that the medium of instruction at the universities is not the students' mother tongue, high failure rates inevitably result (Hofmeyr and Spence, 1989).

Such a gap was readily identified in 1989 when the South African Defence Force decided to admit more students from other race groups to the Military Academy, a traditionally white institution. These students would study for a degree in Military Science in response to the need for more professionally trained officers from all race groups. During the selection process, it was soon perceived that the prospective students would require intensive training in subjects such as science and mathematics, and more especially in reading, writing, and study skills.

Although many factors contribute to academic backlogs, it was decided that the bridging course would emphasize the integration of language and thinking skills, as language involves and incorporates many of the causal factors and is also interdependently linked with cognitive abilities (Nickerson, Perkins & Smith, 1985). In addition, experience had shown that students from different cultural backgrounds who were required to study in a foreign milieu usually experienced problems such as lack of self-confidence and motivation, and a poor self-image. These needs would also have to be addressed in the envisaged bridging course.

The Institute for Language Teaching at the University of Stellenbosch was thus approached to design and implement a seven-week bridging course in October/November 1990 for fifteen students (4 Whites, 2 Indians, 2 Coloureds, 7 Blacks). An academic and personality profile had been compiled for each student, based on, inter alia, matriculation results, interviews and a series of intelligence tests administered by the Psychology Department at the University of Stellenbosch. From these profiles it was concluded that these students were not adequately prepared for the academic demands of the course at that stage. As the language of instruction at the Military Academy was predominantly Afrikaans, while most of the text books were in English, it was clear that students' skills in both these languages needed to be upgraded.

2 Research design

An extensive *needs assessment* was first undertaken to ensure an effective and targeted research design. This included visits to the Military Academy where a study was made of the learning environment of the target group, as well as of the content and academic level of several first year subjects and of evaluation techniques. Detailed profiles were also drawn up of each student selected for bridging.

This assessment was extended by including anticipated needs as identified during similar endeavours in the past, viz. bridging courses for ESKOM, the Universities of Cape Town and the Witwatersrand, and the research of Odendaal in 1985.

A clear *research problem* emerged from the above: the target group did not meet the required academic standards for study at the Military Academy. Some means had to be found of bridging the gap between their current abilities and their identified needs.

The *primary goal* of the research was, therefore, to design and implement a seven-week bridging course that would meet the cognitive, affective and behavioural needs of the target group. The *secondary goal* was to conduct an effective formative and summative evaluation of the course and to compare the course with other approaches to bridging in South Africa.

The *selection of the target group* was done by the South African Defence Force to include all population groups. The prospective students had to have an officer's rank and a matriculation exemption pass.

The *ideographic research* method was used and 16 *pre- and post-tests* were administered in 3 broad categories: intelligence tests; reading and writing proficiency tests (Afrikaans and English); listening and oral proficiency tests (Afrikaans and English). The t-test was applied to determine whether pre- and post-test results differed significantly. In addition, all test and examination results during the students' first year of study were monitored and assessed.

The quantitative data thus collected was supplemented by qualitative information gained from interviews and questionnaires involving both students and lecturers, during the bridging course as well as in the course of their first year of study.

3 Description of the bridging course

3.1 Overview of the course

The course was an intensive experience presented over seven weeks, from 08:00 to 16:30 daily. The first three weeks were given to the English course, and the next four weeks to the Afrikaans course. Skills taught in the course were integrated into 1991 Academy course work. Results were monitored throughout 1992.

The focus of instruction in this bridging course was on the improvement of English and Afrikaans language skills, on thinking skills, and on affective variables that would help students to succeed in their first year of study in a bilingual setting. A large number of study

skills were taught in the context of materials drawn from the first year curriculum of the Military Academy.

The instructional day was divided into four sessions, two in the morning and two in the afternoon. Two sessions focused on developing English or Afrikaans language competence through use of language in context. The two other sessions focused primarily on the skills needed for tertiary academic success. Affective skills were interspersed and stressed throughout. The thinking skills work was done in English and Afrikaans, so that the course components were highly integrated. A special instructional approach, based on Suggestopedia, was used throughout the course.

At the beginning of most sessions, the group participated in brief physical and mental relaxation exercises. In the English course, one act per day of a specially written text *The trail up the mountain* was activated or used as a basis for language activities. The text contained all the macro language functions which had been identified and selected as course objectives, such as simplification, the use of key words, note-taking, organizing ideas, supporting main ideas with evidence, making summaries, defining, making generalisations, and drawing logical conclusions. Students actively practised and used these macro functions as the means of mastery. In the Afrikaans course, a text entitled *Gewapen met kennis* was used regularly to promote appropriate use of language in an academic setting. Instruction in both languages aimed at developing the skills of listening, speaking, reading, and writing.

Thinking tools were systematically taught and practised, along with various thinking skills, in order to help students develop strategies for mastering their work in the most effective way possible.

The course included several sessions involving affirmation of self, and self-management through assertion rather than aggression or submission.

Actual lecturing, in which the teacher talks and students listen, was minimized. When utilized, it was usually combined with a directed activity done by students in pairs or groups, or focused on study skills such as note-taking. Emphasis was on active learning. However, guest lecturers were invited for various purposes.

Students kept a journal daily, which formed a chronologically sequenced communicative writing exercise. Journals were read regularly and responded to by instructors. The content of the journals focused on daily activities of the course and on the individual's perceptions, feelings, reactions, and judgements.

In addition to the content outlined above, components on logical reasoning, and on how to improve students' concentration and memory were included in the course.

3.2 The instructional approach

The approach used aims at accelerating learning and is organised around the following cycle: physical relaxation, mental relaxation, activations, and the concert session. Physical relaxation exercises improve deep breathing and blood circulation, and they assist concentration, bonding of the students, and the creation of a positive atmosphere. Mental relaxation, using baroque background music, consists of an activity such as remembering an early pleasant learning experience, imagining a visit to a favourite spot, or guided imagery based on the text.

Next in the cycle comes activations, such as dramatization, language games, and songs. Activities of this type **activate** or help the learner use and internalise more strongly the language material which has already been read and understood. The concert session is the input phase of the next act in the text. The instructor reads the new act first to the accompaniment of classical music, and reads it again to learners in a relaxed state to the accompaniment of baroque music.

The use of new **identities** is part of the method. Students were presented with posters containing the names of famous military figures from history, along with their places of origin. Students then chose which person they would be for the course, e.g. Napoleon, Eisenhower, Nelson, Alexander the Great, etc.

The venue in which the course was presented is also part of the method. A large, comfortably furnished room was set aside for the course, containing all the facilities required, such as an overhead projector, a compact disc player, and attractive posters. The chairs were placed in a large semi-circle to enable easy interaction of the students.

The emphasis in the class was on language use rather than on language analysis, as in traditional grammar-based language instruction. To acquire language, even at an advanced level, one must have opportunities to hear it and speak it. To this end much of the work was done in small groups, where interaction is easier and students have more chance to be actively involved.

3.3 Course content

The following is a brief synopsis of the course content.

3.3.1 Language skills

The language skills were taught in the context of the specially written texts. The skills were actively practised by means of language games, group discussions, dramatisations, and related activities. The approach adopted was a communicative one which favoured regular, spontaneous and authentic use of language in realistic communication situations. Listening, speaking, reading, and writing skills were all catered for. One example of each is supplied.

- **Listening skills:** Guest lecturers from the Military Academy were invited to give an authentic first year lecture. Students had to listen carefully and take notes.
- **Speaking skills:** Apart from the many group discussions held, students had to research the biographies of the military identities they had assumed and compile an oral presentation on their lives. The emphasis was on structuring information.
- **Reading skills:** A copy of the local newspaper was made available every morning, and students had turns to discuss an article or report they had read. In addition, they had to read one act of the text every day.
- **Writing skills:** Students kept journals in which they were asked to record their thoughts on a daily basis. This included a discussion of problems, the making of requests, describing feelings, etc.

3.3.2 Study skills

The study skills were interwoven with the language work. These skills were applied in the context of actual lectures and extracts from prescribed reading and study material taken from the first year curriculum. These exercises were linked to the writing of staff papers. Some of the study skills covered were:

- **Reading for comprehension** (skimming, scanning, finding linking words, deriving meaning by using contextual clues, etc.)
- **Note-taking** (using key words, abbreviations, mind-maps)
- **Organising notes** to assist memorisation, according to patterns of sequence, order of importance, cause and effect, classification, specific-general links, etc.

- Developing notes into coherent summaries
- Defining key concepts
- Drawing conclusions
- Effective use of dictionaries

3.3.3 Logic

A short course on logical reasoning was presented, focusing on the nature of arguments and assertions, and on how to evaluate the validity and truth of an argument.

3.3.4 Thinking skills

Students need a certain level of cognitive ability to cope with subjects that require insight and reasoning skill, rather than memorisation. All thinking implies the use of language, thus, it was theorised that the integration of thinking and language work prove mutually enriching. The skills selected were taken mainly from the De Bono *CoRT* curriculum (1986), and the *Odyssey* course: *A curriculum for thinking* (Adams, 1986). These skills could also be classified as life skills which the students could use when adapting to their new study environment.

3.3.5 Concentration and memory

Students were made aware of the importance of being able to concentrate well. Reasons for lack of concentration were discussed and analysed.

Ways of improving memory were discussed. A link system was explained and practised in relevant contexts to facilitate recall of important facts.

3.3.6 Assertiveness

To improve students' self-confidence and self-image, ways of developing interactional skills were discussed. The focus was on assertive rather than aggressive or submissive behaviour, and this was practised by means of role play.

All the above components were integrated as fully as possible throughout the English and Afrikaans courses, and were regularly supplemented by the use of video recordings for related purposes.

4 Results of the research

The bridging course was evaluated in two phases: the first took place during and immediately after the completion of the course itself (October/November 1990); the second during two follow-up visits to the Academy (March/October 1991). During both phases, quantitative data (pre- and post-test results) as well as qualitative data (continual observations, interviews, and questionnaires) were collated and eventually analysed and interpreted.

4.1 Evaluation during the first phase

- Weekly interviews with the 5 main course presenters enabled timely adaptations to be made to the course content and presentation.

- Interviews held with the students as well as feedback in the form of a structured questionnaire at the end of the course showed that the students evaluated the course very positively.
- The pre- and post-test results were also very encouraging. (The average percentage improvement is indicated in Table I. In the case of IQ, an average mark improvement is given.)

TABLE I : PRE- AND POST-TEST RESULTS (OCTOBER AND NOVEMBER 1990)

TEST	AVERAGE PERCENTAGE IMPROVEMENT
Foundations of reasoning	7,6%
English reading skills	4,7%
English written proficiency	6,5%
Afrikaans reading skills	4,3%
Afrikaans written proficiency	9,8%
	Average mark improvement
IQ test	1,5%

Table I indicates statistically significant improvements for all tests (in all cases $p < 0,01$), except for IQ (which was, however, not expected to improve significantly).

On the basis of these first phase results, three students were strongly recommended for the degree course at the Academy; five were recommended with the prediction that they would need four years to complete the three-year course; two were recommended with reservations for a four-year degree; one was recommended with reservations for a diploma course, and one was not recommended at all. The Academy, however, accepted all fifteen students.

4.2 Evaluation during the second phase

During this phase interviews and questionnaires were used to determine how well the students were adapting to their new environment and what academic progress they were making.

The test and examination results of 1991 were analyzed, and revealed the following:

- Seventy-six first year students enrolled at the Military Academy at the beginning of 1991, of whom four terminated their studies before the end of that year. One of the four was a bridging course student, but he ended his studies for personal and not academic reasons.
- In the final examination two of the remaining fourteen bridging course students failed and were not allowed to continue their studies (14,3% of the bridging students' group), compared to twenty of the other first years (34,5% of the non-bridging students' group).
- Nine of the twelve successful bridging course students had some credits in arrear, compared to twenty-four of the 60 other first year students.

4.3 Qualitative data

The qualitative data collected by means of observation, interviews, and questionnaires revealed that the students:

- reacted positively to the methods of presentation

- rated the components on study methods, memory techniques, and thinking skills very highly
- felt that only one language should feature in the bridging course
- wanted an even greater emphasis on study techniques and any other means of preparing them for the heavy academic load in their first year of study
- wanted the content of the course to be even more focused on relevant subject content
- wanted more practice in writing staff papers
- wanted guidance in using available time effectively.

5. Conclusions and recommendations

The fact that the majority of the bridging students continued their studies into the second year, despite the very negative profile of their academic abilities and the negative prognosis for successful academic study, suggests that the bridging course was largely successful in achieving its goals. This further implies that matriculation results are not a reliable indication of academic potential.

Despite the heterogeneous composition of the target group and their diverse needs and abilities, the content and method of presentation of the bridging course made a significant difference to the first year achievements of the target group by directly addressing their identified needs. This includes the need to boost self-confidence and self-image, as well as the strengthening of motivation. The integration of language and thinking skills together with components on improving memory, on logic and selected study skills in a subject-specific context appears to have been an effective means of bridging the gap between students' entrance level and the academic requirements of first year study.

From a comparative study of bridging courses presented at other South African universities, the following emerged:

- Language plays an important role in most tertiary bridging courses or academic support programmes.
- There are major differences of opinion regarding the extent to which language should be integrated with the course content. Some programmes deal with language as a distinct and separate entity, in the belief that the language skills taught will be transferred to the subject content. Other courses have integrated language skills so fully into the support programme that they cannot be identified as such. The Military Academy bridging course opted for an explicit focus on selected language skills in both a general and a specific subject context. This approach appears to have been successful in effectively promoting transfer of skills. Student feedback confirms this, and in later interviews and questionnaires students requested an even sharper focus on language and study skills in subject-specific contexts.
- None of the other support programmes which were specifically examined, integrate thinking skills, study skills, and language content in the manner described in this approach. As this approach is still in an experimental phase, it can clearly be extended and refined for even more effective use in the future.

The apparent success of this bridging course needs to be qualified. Any future course of this nature should take into account the following:

- A bridging course should focus on only one language at a time.
- The composition of the target group should be as homogeneous as possible.

- There should be a sharper focus on the most essential study skills, and more opportunities should be given to practise these in a subject-specific context.
- The integration of study, thinking, and language skills in such a course is a viable option with great potential for further development.
- A bridging course should also cater for students' specific affective needs.
- The didactic approach to this course (relaxation techniques, use of music, language activations and games, and the use of specially written texts) was well received and effective, and should be retained.

Part of the course should be devoted to the simulation of a typical study day, so that students can experience the pressures, challenges, and demands of actual study in a realistic context, and thus be better prepared for their first year of study.

A bridging course needs to be supplemented by a practical, effective, and relevant support programme to fully achieve its goals.

A great deal was learned from the implementation of this course. Should a second such course be designed, many improvements could be made, and from a research point of view it could serve as a model for future bridging actions in South Africa.

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